DS-9664NI-RH Series NVR

User Manual

Version 2.1.1

Hikvision® Network Digital Video Recorder User's Manual

This manual, as well as the software described in it, is furnished under license and may be used or copied only in accordance with the terms of such license. The content of this manual is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by Hikvision Digital Technology Co., Ltd. (Hikvision). Hikvision assumes no responsibility or liability for any errors or inaccuracies that may appear in the book.

Except as permitted by such license, no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of Hikvision.

HIKVISION MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE HIKVISION SOFTWARE. HIKVISION DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF THE HIKVISION SOFTWARE IN TERMS OF ITS CORRECTNESS, ACCURACY, RELIABILITY, CURRENTNESS, OR OTHERWISE. THE ENTIRE RISK AS TO THE RESULTS AND PERFORMANCE OF THE HIKVISION SOFTWARE IS ASSUMED BY YOU. THE EXCLUSION OF IMPLIED WARRANTIES IS NOT PERMITTED BY SOME STATES. THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

IN NO EVENT WILL HIKVISION, ITS DIRECTORS, OFFICERS, EMPLOYEES, OR AGENTS BE LIABLE TO YOU FOR ANY CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGES (INCLUDING DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION, AND THE LIKE) ARISING OUT OF THE USE OR INABILITY TO USE THE HIKVISION SOFTWARE EVEN IF HIKVISION HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info.

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info.

Description on Laser Specification

The optical disc drive such as DVD Super Multi (Double Layer) Drive 22X that is used in this computer is equipped with laser. The classification label with the following sentence is affixed to the surface of the drive.

CLASS 1 LASER
PRODUCT TO IEC60825-1
LASER KLASSE 1

The drive with the above label is certified by the manufacturer that the drive complies with the requirement for laser product on the date of manufacturing pursuant to article 21 of Code of Federal Regulations by the United States of America, Department of Health & Human Services, Food and Drug Administration.
In other countries, the drive is certified to comply with the requirement pursuant to IEC 60825-1 and EN 60825-1 on class 1 laser product.
This computer is equipped with the optical disc drive in the following list according to the model.

Safety Warnings and Cautions

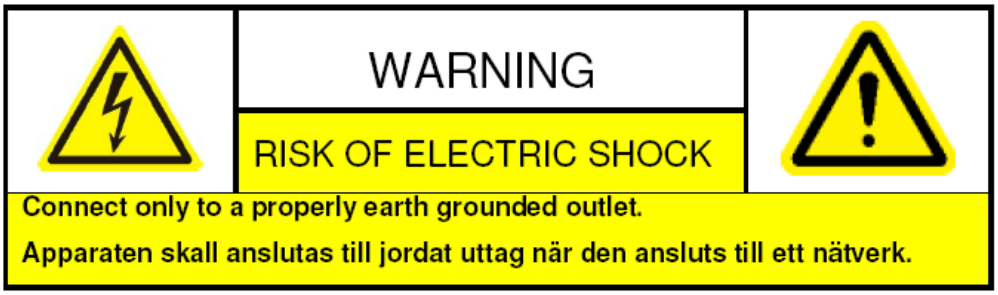
Please pay attention to the following warnings and cautions:

Hazardous Voltage may be present: Special measures and precautions must be taken when using this device. Some potentials (voltages) on the device may present a hazard to the user. This device should only be used by the Employees from our company with knowledge and training in working with these types of devices that contain live circuits.

Caution
The power supply in this product contains no user-serviceable parts.
Refer servicing only to qualified personnel.

Power Supply Hazardous Voltage: AC mains voltages are present within the power supply assembly. This device must be connected to a UL approved, completely enclosed power supply, of the proper rated voltage and current.

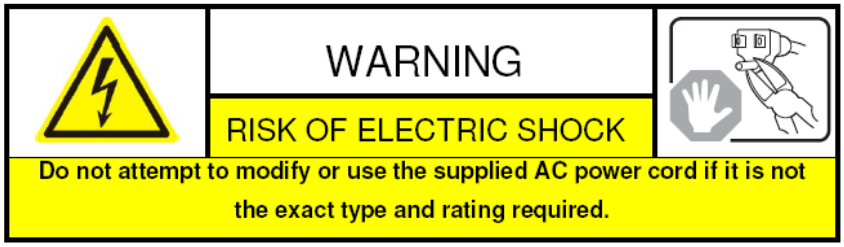
No user serviceable parts inside the power supply.


WARNING
RISK OF ELECTRIC SHOCK
Connect only to a properly earth grounded outlet.
Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk.

System Grounding (Earthing): To avoid shock, ensure that all AC wiring is not exposed and that the earth grounding is maintained. Ensure that any equipment to which this device will be attached is also connected to properly wired grounded receptacles and are approved medical devices.

Power Connect and Disconnect: The AC power supply cord is the main disconnect device to mains (AC power).The socket outlet shall be installed near the equipment and shall be readily accessible.

Installation and Maintenance: Do not connect/disconnect any cables to or perform installation/maintenance on this device during an electrical storm.


WARNING
RISK OF ELECTRIC SHOCK
Do not attempt to modify or use the supplied AC power cord if it is not the exact type and rating required.

Power Cord Requirements: The connector that plugs into the wall outlet must be a grounding-type male plug designed for use in your region. It must have certification marks showing certification by an agency in your region. The connector that plugs into the AC receptacle on the power supply must be an IEC 320, sheet C13, female connector. See

the following website for more information http://kropla.com/electric2.htm.

Lithium Battery: This device contains a Lithium Battery. There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries according to the vendor's instructions and in accordance with local environmental regulations.

Perchlorate Material: Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate. This notice is required by California Code of Regulations, Title 22, Division 4.5, Chapter 33: Best Management Practices for Perchlorate Materials. This device includes a battery which contains perchlorate material.

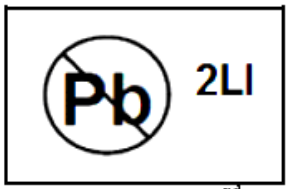
Taiwan battery recycling:

Please recycle batteries.

Thermal and Mechanical Injury: Some components such as heat sinks, power regulators, and processors may be hot; care should be taken to avoid contact with these components.

Electro Magnetic Interference: This equipment has not been tested for compliance with emissions limits of FCC and similar international regulations. This device is not, and may not be, offered for sale or lease, or sold, or leased until authorization from the United States FCC or its equivalent in other countries has been obtained. Use of this equipment in a residential location is prohibited. This equipment generates, uses and can radiate radio frequency energy which may result in harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is required to take measures to eliminate the interference or discontinue the use of this equipment.

Lead Content:



Please recycle this device in a responsible manner. Refer to local environmental regulations for proper recycling; do not dispose of device in unsorted municipal waste.

Preventive and Cautionary Tips

Before connecting and operating your NVR, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the NVR.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the NVR in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Product Key Features

- Connectable to network camera/dome and network video server.
- Each channel supports dual stream.
- Video encoding parameters of each channel can be set separately, including resolution, frame rate, bit rate and image quality.
- Each channel supports normal and event compression parameters.
- Both composite (audio & video) stream and video stream. Audio and video streams are strictly simultaneous.
- Email notification.

Local Monitoring

- HDMI/VGA output at up to 1920×1080P resolution.
- 1/4/6/8/9/16-division video live view, with adjustable cameras order for display.
- Group switch, manual switch and automatic cycle modes selectable for video live view, with the auto cycle period configurable.
- Digital zooming in live view mode.
- Shield of assigned channel for live view.
- Motion detection, video loss detection and video tampering detection configurable.
- Privacy masking capability.
- Configuration and calling of presets, patrols and patterns.

Hard Disk Management

- Up to 16 SATA HDDs, 8 network HDDs (eight NAS disks or seven NAS disks + one iSCSI disk) can be connected, and each disk supports a maximum of 3TB capacity.
- Support S.M.A.R.T technology.
- HDD standby function.
- HDD management in groups.
- Use pre-allocating hard disk management technology adopted to ensure no disk fragments.
- Support RAID 0/1/5/10, with the following capabilities: disk array and virtual disk configurable, manual disk array rebuilding, hot swap/spare rebuilding, RAID level migration and one-button configuration.
- Up to 16 virtual disks can be configured.

Recording and Playback

- Cycle and non-cycle recording mode.
- Scheduled and event video recording parameters configurable separately.
- Multiple recording types, including manual, continuous, alarm, motion, motion | alarm and motion & alarm recording, etc.
- 8 recording time periods configurable with separate recording types.
- Pre-record and post-record for relay alarm and motion detection.
- Search of record files by event type.
- Lock and unlock of video files over client software.
- Local redundant recording.
- Configure specified record files in hard disk to read only.
- Video data search and playback by channel number, recording type, time etc.
- Digital zoom in playback mode.
- Support pause, fast forward, slow forward, skip forward, and skip backward when playback, locating in progress bar by dragging the mouse over client software.
- Up to 4-channel synchronous playback at 4CIF resolution.

Backup

- Record files backed up via USB device or SATA CD-RW.
- Backup the files via e-SATA (optional).
- Bunch backup by file or by time.

- Backup video clips in playback.
- Management and maintenance for backup devices.
- One-button quick backup via front panel.

Alarm & Exception

- Unified management of relay alarm in/out of the unit and IP cameras.
- Unified management of video tempering alarm, motion and video loss alarm of IP cameras.
- Configurable arming time of alarm in/out.
- Various alarm types supported: alarms for video loss, motion detection, video tempering, illegal access, network disconnection, IP conflict, hard disk error and hard disk full.
- Various alarm response actions supported: camera recording, relay out, on-screen warning, audible warning and upload to center, etc.
- Auto recovery from exceptions.

Network

- Up to two 10/100/1000Mbps self-adaptive UTP Ethernet interfaces.
- Support TCP/IP, UDP, PPPoE, DHCP, DNS, DDNS, NTP, SADP, SMTP, and NFS (access to NAS) ISCSI protocol.
- Unicast and multicast transmission; TCP, UDP, and RTP protocols supported in unicast.
- Remote search, playback and download, lock/unlock of video files; support breakpoint resume.
- Remote access and configuration of parameters; remote import/export of device configuration parameters.
- Remote access of device running status, system log and alarm status.
- Remote button operation.
- Remote formatting of hard disk, upgrade, reboot/shutdown and other system maintenance operations.
- Event alarm and exceptions upload to remote management center.
- Remote manual recording.
- Remote video image capture in JPEG format.
- Remote PTZ control.
- Two-way audio or voice broadcast.
- Built-in WEB Server.

Others

- Control via mouse, remote control and special keyboard.
- Three-level user management, each user account can be configured by *admin* with individual operating permission for the device.
- Powerful recording and search for logs of operation, alarm and exceptions.
- Manual alarm triggering/clearance.
- Import/export of device configuration files.
- Display of device running information on front panel LCD.

Development

- Provide SDK in Windows and Linux operating systems.
- Application software source code of Demo.
- Support and training service for application system development.

TABLE OF CONTENTS

Product Key Features 3
C H A P T E R 1 9
Introduction 9
1.1 Front Panel 10
1.2 IR Remote Control Operations 11
1.3 USB Mouse Operation 13
1.4 Input Method Description 14
1.5 Rear Panel 14
1.6 Starting Up and Shutting Down the NVR 15
C H A P T E R 2 17
Getting Started 17
2.1 Using the Wizard for Basic Configuration 18
2.2 Adding and Connecting the IP Cameras 22
2.2.1 Adding the IP Cameras 22
2.2.2 Configuring the Connection of IP Cameras 23
C H A P T E R 3 26
Live View 26
3.1 Introduction of Live View 27
3.2 Operations in Live View Mode 28
3.2.1 Using the Mouse in Live View 28
3.2.2 Quick Setting Toolbar in Live View Mode 28
3.3 Adjusting Live View Settings 30
3.4 User Logout 32
C H A P T E R 4 33
PTZ Controls 33
4.1 Configuring PTZ Settings 34
4.2 Setting PTZ Presets, Patrols & Patterns 35
4.2.1 Customizing Presets 35
4.2.2 Calling Presets 36
4.2.3 Customizing Patrols 37
4.2.4 Calling Patrols 38
4.2.5 Customizing Patterns 39
4.2.6 Calling Patterns 40
4.3 PTZ Control Toolbar 40
C H A P T E R 5 42
Record and Capture Settings 42
5.1 Configuring Encoding Parameters 43
5.2 Configuring Record/Capture Schedule 46
5.3 Configuring Motion Detection Record and Capture 49
5.4 Configuring Alarm Triggered Record and Capture 53
5.5 Manual Record and Continuous Capture 56
5.6 Configuring Holiday Record and Capture 57

5.7 Configuring Other Recording and Capture Types 59
5.8 Configuring Redundant Recording and Capture 61
5.9 Configuring HDD Group for Recording and Capture 63
5.10 Files Protection 64
CHAPTER 6 67
Playback 67
6.1 Playing Back Record Files 68
6.1.1 Playing Back by Channel 68
6.1.2 Playing Back by Time 71
6.1.3 Playing Back by Normal Video Search 72
6.1.4 Playing Back by Event Search 75
6.1.5 Playing Back by Tag 79
6.1.6 Playing Back by System Logs 82
6.2 Auxiliary Functions of Playback 85
6.2.1 Playing Back Frame by Frame 85
6.2.2 Digital Zoom 85
6.3 Picture Playback 87
CHAPTER 7 89
Backup 89
7.1 Backing up Record Files 90
7.1.1 One-button Backup 90
7.1.2 Quick Export 90
7.1.3 Backing up by Normal Video Search 92
7.1.4 Backing up by Event Search 99
7.1.5 Backing up Video Clips 102
7.2 Backing up Pictures 105
7.3 Managing Backup Devices 107
CHAPTER 8 111
Alarm Settings 111
8.1 Setting up Motion Detection Alarm 112
8.2 Setting up Sensor Alarms 114
8.3 Detecting Video Loss Alarm 117
8.4 Detecting Video Tampering Alarm 118
8.5 Handling Exceptions Alarm 120
8.6 Setting Alarm Response Actions 121
8.7 Triggering or Clearing Alarm Output Manually 123
CHAPTER 9 124
Network Settings 124
9.1 Configuring General Settings 125
9.2 Configuring Advanced Settings 126
9.2.1 Configuring PPPoE Settings 126
9.2.2 Configuring DDNS 127
9.2.3 Configuring NTP Server 129
9.2.4 Configuring SNMP 130

9.2.5 Configuring Remote Alarm Host....131
9.2.6 Configuring Multicast....132
9.2.7 Configuring RTSP....132
9.2.8 Configuring Server and HTTP Ports....133
9.2.9 Configuring Email....133
9.3 Checking Network Traffic....135
9.4 Configuring Network Detection....136
9.4.1 Testing Network Delay and Packet Loss....136
9.4.2 Exporting Network Packet....136
9.4.3 Checking the Network Status....138
9.4.4 Checking Network Statistics....139
CHAPTER 10....140
RAID Configuration....140
10.1 Creating an Array....141
10.1.1 Enabling RAID....142
10.1.2 Creating an Array by One-touch Configuration....142
10.1.3 Creating an Array Manually....144
10.2 Rebuilding an Array....148
10.2.1 Automatically Rebuilding Array....148
10.2.2 Manually Rebuilding Array....149
10.3 Repairing Virtual Disk....151
10.4 Deleting Array/Virtual Disk....152
10.4.1 Deleting a Virtual Disk....152
10.4.2 Deleting an Array....152
10.5 Migrating an Array....154
10.6 Unplugging Safely....155
10.7 Checking Firmware....156
CHAPTER 11....158
HDD Management....158
11.1 Initializing HDDs....159
11.2 Managing Network HDD....161
11.3 Managing eSATA....164
11.4 Managing HDD Group....165
11.4.1 Setting HDD Groups....165
11.4.2 Setting HDD Property....166
11.5 Configuring Quota Mode....168
11.6 Checking HDD Status....169
11.7 Checking S.M.A.R.T. Information....171
11.8 Configuring HDD Error Alarms....172
CHAPTER 12....173
Camera Settings....173
12.1 Configuring OSD Settings....174
12.2 Configuring Privacy Mask....174
12.3 Configuring Video Parameters....175

C H A P T E R 13 177
NVR Management and Maintenance 177
13.1 Viewing System Information 178
13.1.1 Viewing Device Information 178
13.1.2 Viewing Camera Information 178
13.1.3 Viewing Record Information 179
13.1.4 Viewing Alarm Information 179
13.1.5 Viewing Network Information 180
13.1.6 Viewing HDD Information 180
13.2 Searching & Export Log Files 182
13.3 Importing/Exporting Configuration Files 184
13.4 Upgrading System 186
13.4.1 Upgrading by Local Backup Device 186
13.4.2 Upgrading by FTP 186
13.5 Restoring Default Settings 188
C H A P T E R 1 4 189
Others 189
14.1 Configuring RS-232 Serial Port 190
14.2 Configuring General Settings 191
14.3 Configuring DST Settings 192
14.4 Configuring More Settings 192
14.5 Managing User Accounts 193
14.5.1 Adding a User 193
14.5.2 Deleting a User 195
14.5.3 Editing a User 195
14.5.4 Changing Password of Admin 196
C H A P T E R 1 5 198
Appendix 198
List of Hikvision Network Cameras/Encoders Supported by DS-9664NI-RH 199
List of Third-party Network Cameras Supported by DS-9664NI-RH 204
Glossary 206
FAQ 207

C H A P T E R 1

Introduction

1.1 Front Panel

The front panel of DS-9664NI-RH is shown in Figure 1.1.

Figure 1.1 Front Panel

Table 1.1 Description of Control Panel Buttons

No.	Name	Function Description
1	HDD Status	HDD (1-16) indicator normally lights in blue when the HDD is connected; and it blinks blue when data is being read from or written to HDD.
2	Power ON/OFF	Power on/off switch. (Press and hold the button for 3 sec to shut down the device.)
3	LCD	Display the current system information.
4	Front Panel Lock	Lock or unlock the panel.
5	POWER	Power indicator lights in green when the device is powered on and running; and it lights in red when the device is standby.
	ALARM	Alarm indicator turns red when a sensor alarm is detected.
	READY	Ready indicator normally lights in green, indicating that the NVR is functioning properly.
	ARCHIVE	ARCHIVE indicator blinks in green when the device is backing up files.
	STATUS	Status indicator turns green when NVR is controlled by an IR remote. Indicator turns orange when controlled by a keyboard and purple when IR remote and keyboard is used at the same time.
	Tx/Rx 1	Tx/Rx 1 indictor blinks green when network connection of LAN1 is functioning properly.
	Tx/Rx 2	Tx/Rx 2 indictor blinks green when network connection of LAN2 is functioning properly.
6	Backup	Back up recorded video files.
7	USB Interfaces	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).

1.2 IR Remote Control Operations

The NVR may also be controlled with the included IR remote control, shown in Figure 1.2.

Note: Batteries (2 ×AAA) must be installed before operation.

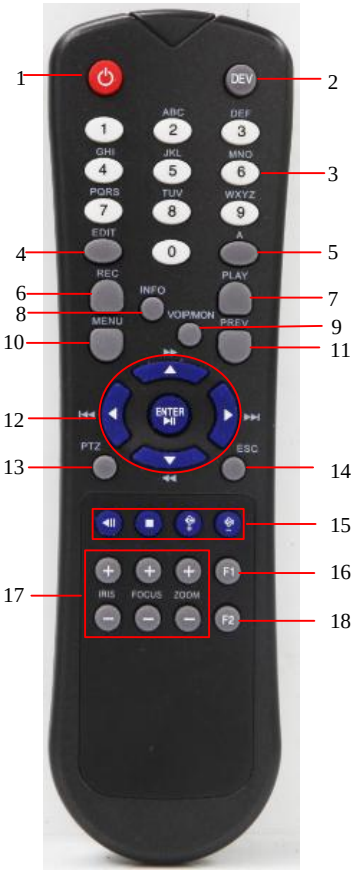


Figure 1.2 Remote Control

Table1.2 Description of the IR Remote Control Buttons

No.	Name	Description
1	**POWER**	Power on/off the device.
2	**DEV**	Enable/Disable Remote Control.
3	**Alphanumeric Buttons:**	Switch to the corresponding channel in Live view or PTZ Control mode. Input numbers and characters in Edit mode. Switch between different channels in All-day Playback mode.
4	**EDIT Button**	The EDIT button is used to edit text fields. When editing text fields, it will also function as a Backspace button to delete the character in front of the cursor. On checkbox fields, pressing the EDIT button will *tick* the checkbox. In PTZ Control mode, the EDIT button is used to adjust the iris of the camera. In Playback mode, it can be used to generate video clips for backup.
5	**A Button**	Switch between input methods (upper and lowercase alphabet,

No.	Name	Description
		symbols and numeric input).
6	**REC Button**	Enter the Manual Record setting menu. In playback mode, press the REC button to open/close the audio.
7	**PLAY Button**	Enter the All-day Playback menu.
8	**INFO Button**	Reserved.
9	**VOIP/MON Button**	Reserved.
10	**MENU Button**	Back to the Main menu (after successful login). In playback mode, press the MENU button to show/hide the playback control area.
11	**PREV Button**	Switch between single screen and multi-screen mode.
12	**DIRECTION**	The DIRECTION buttons are used to navigate between different fields and items in menus. In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files. In Live View mode, these buttons can be used to cycle through channels. In PTZ control mode, it can control the movement of the PTZ camera.
	ENTER	The ENTER button is used to confirm selection in any of the menu modes. It can also be used to *tick* checkbox fields. In Playback mode, it can be used to play or pause the video. In single-frame Playback mode, pressing the button will advance the video by a single frame. In Auto-switch mode, it can be used to start /stop auto switch.
13	**PTZ Button**	Enter the PTZ Control mode.
14	**ESC Button**	Back to the previous menu
15	**RESERVED**	Reserved.
16	**F1 Button**	When used in a list field it will select all items on the list. In PTZ control mode, it will turn on/off PTZ light.
17	**PTZ Control Buttons**	Buttons to adjust the iris, focus and zoom of a PTZ camera.
18	**F2 Button**	Cycle through tab pages.

Troubleshooting Remote Control:

Note: Make sure you have installed batteries properly in the remote control. And you have to aim the remote control at the IR receiver in the front panel.

If there is no response after you press any button on the remote, follow the procedure below to troubleshoot.

Steps:

1. Go to Menu > Configuration > General > More Settings by operating the mouse.
2. Check and remember NVR ID#. The default ID# is 255. This ID# is valid for all the IR remote controls.
3. Press the DEV button on the remote control.
4. Enter the NVR ID# from step 2.
5. Press the ENTER button on the remote.

If the Status indicator on the front panel turns green, the remote control is operating properly. If the Status indicator does not turn green and there is still no response from the remote, please check the following:

1. Batteries are installed correctly and the polarities of the batteries are not reversed.
2. Batteries are fresh and not out of charge.
3. IR receiver is not obstructed.

If the remote still can't function properly, please change a remote and try again, or contact the device provider.

1.3 USB Mouse Operation

A regular 3-button (Left/Right/Scroll-wheel) USB mouse can also be used with this NVR. To use a USB mouse:

1. Plug USB mouse into one of the USB interfaces on the front panel of the NVR.
2. The mouse should automatically be detected. If in a rare case that the mouse is not detected, the possible reason may be that the two devices are not compatible, please refer to the recommended the device list from your provider.

The operation of the mouse:

Table 1.3 Description of the Mouse Control

Name	Action	Description
Left-Click	Single-Click	Live view: Select channel and show the quick set menu. Menu: Select and enter.
	Double-Click	Live view: Switch between single-screen and multi-screen.
	Click and Drag	PTZ control: pan, tilt and zoom. Tamper-proof, privacy mask and motion detection: Select target area. Digital zoom-in: Drag and select target area. Live view: Drag channel/time bar.
Right-Click	Single-Click	Live view: Show menu. Menu: Exit current menu to upper level menu.
Scroll-Wheel	Scrolling up	Live view: Previous screen. Menu: Previous item.
	Scrolling down	Live view: Next screen. Menu: Next item.

1.4 Input Method Description

Figure 1.3 Soft Keyboard

Description of the buttons on the soft keyboard:

Table 1.4Description of the Soft Keyboard Icons

Icons	Description	Icons	Description
En	English	A	Capital English
123	Numbers		Symbols
a	Lowercase/Uppercase		Backspace
	Space	Enter	Enter
ESC	Exit		

1.5 Rear Panel

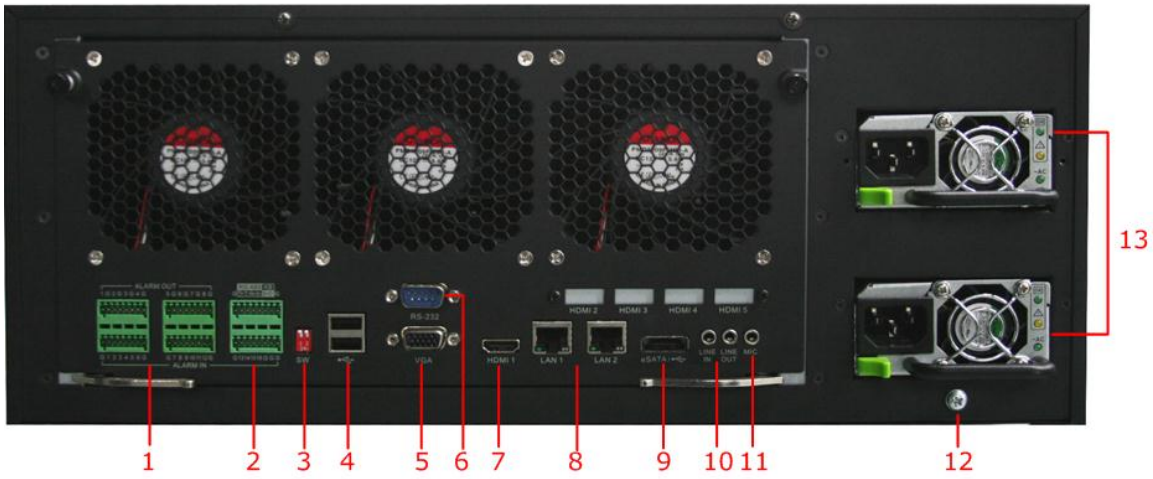


Figure 1.4 Rear Panel

Table 1.5 Description of Rear Panel

No.	Item	Description
1	**ALARM IN**	Connector for alarm input.
	ALARM OUT	Connector for alarm output.
2	**RS-485 Interface**	Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively.

No.	Item	Description
	Keyboard	D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first NVR's D+, D- pin should be connected with the D+, D- pin of the next NVR.
3	**Termination Switch**	RS-485 termination switch. Up position is not terminated. Down position is terminated with 120Ω resistance.
4	**USB Interfaces**	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
5	**VGA OUT**	VGA video output connector.
6	**RS-232 Interface**	Connector for RS-232 devices.
7	**HDMI**	HDMI video output connector.
8	**LAN1/LAN2 Interface**	Connector for LAN (Local Area Network).
9	**eSATA/USB**	Connects external SATA HDD, CD/DVD-RM or USB device.
10	**LINE IN**	3.5mm connector for two-way audio input.
	LINE OUT	3.5mm connector for audio output.
11	**MIC IN**	3.5mm connector for two-way audio input.
12	**GND**	Grounding (needs to be connected when NVR starts up).
13	**Dual Power Supply Modules**	100 ~ 240VAC Input.

Note: Single power supply module is provided by factory default configuration; and the dual power supply modules are customizable.

1.6 Starting Up and Shutting Down the NVR

Purpose:

Proper startup and shutdown procedures are crucial to expanding the life of the NVR.

Before you start:

Check that the voltage of the extra power supply is the same with the NVR's requirement, and the ground connection is working properly.

Starting up the NVR

Connect the power supply to the device, and the Power indicator LED on the front panel will light in green, indicating the device has started up.

It is HIGHLY recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the device.

Shutting down the NVR

Steps:

There are two proper ways to shut down the NVR. To shut down the NVR:

• OPTION 1: Standard shutdown

1. Enter the Shutdown menu.
   Menu > Shutdown

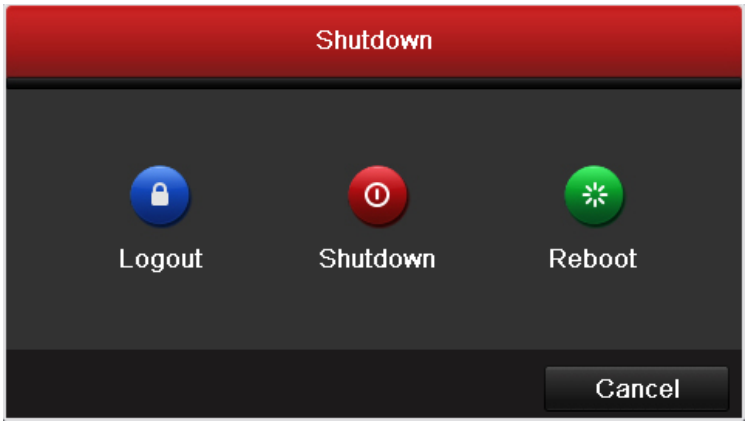


Figure 1.5 Shutdown Menu

2. Click the **Shutdown** button.
3. Click the **Yes** button.

• OPTION 2: By operating the front panel

1. Press and hold the POWER button on the front panel for 3 seconds.
2. Enter the dialog box for confirming the device shutdown.
3. Click the **Yes** button.

Note: Do not press the POWER button again when the system is shutting down.

Rebooting the NVR

In the Shutdown menu (Figure 1.5), you can also reboot the NVR.

Steps:

1. Enter the **Shutdown** menu by clicking Menu > Shutdown.
2. Click the **Logout** button to lock the NVR or the **Reboot** button to reboot the NVR.

C H A P T E R 2

Getting Started

2.1 Using the Wizard for Basic Configuration

By default, the Setup Wizard starts once the NVR has loaded, as shown in Figure 2.1.

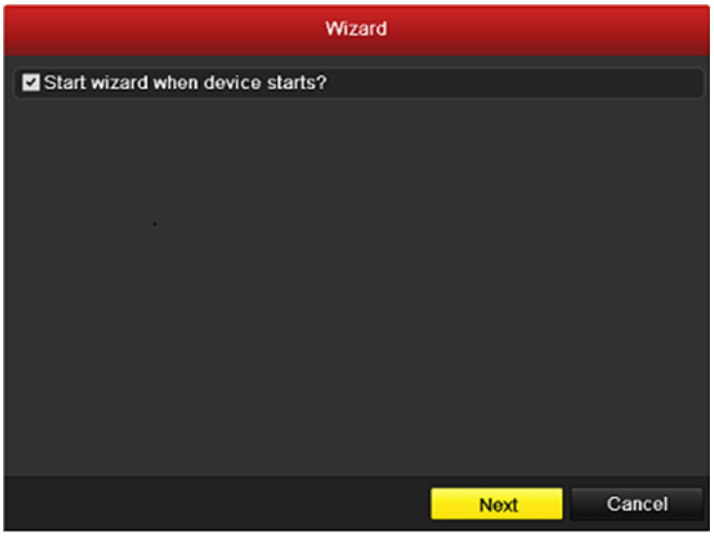


Figure 2.1 Start Wizard Interface

Operating the Setup Wizard:

1. The Setup Wizard can walk you through some important settings of the NVR. If you don't want to use the Setup Wizard at that moment, click the **Cancel** button. You can also choose to use the Setup Wizard next time by leaving the "Start wizard when NVR starts?" checkbox checked.
2. Click **Next** button on the Wizard window to enter the **Login** window, as shown in Figure 2.2.

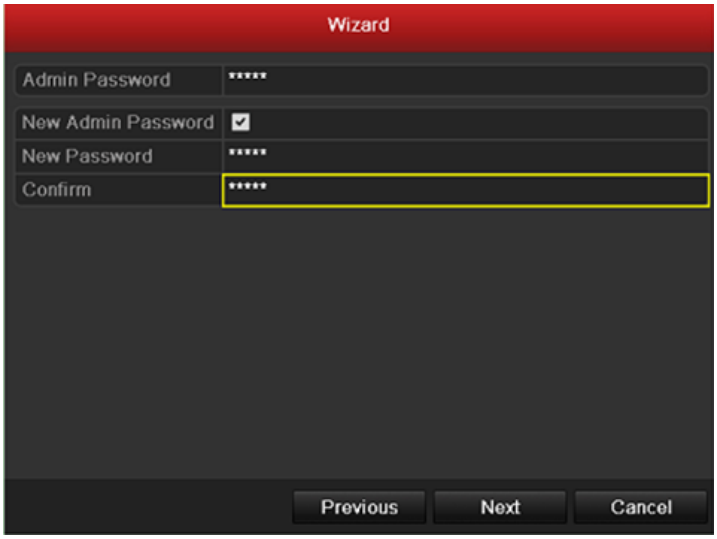


Figure 2.2 Login Window

3. Enter the admin password. By default, the password is 12345.
4. To change the admin password, check the **New Admin Password** checkbox. Enter the new password and confirm the password in the given fields.
5. Click the **Next** button to enter the date and time settings window, as shown in Figure 2.3.

Figure 2.3 Date and Time Settings

6. After the time settings, click **Next** button to enter the Network Setup Wizard window, as shown in Figure 2.4.

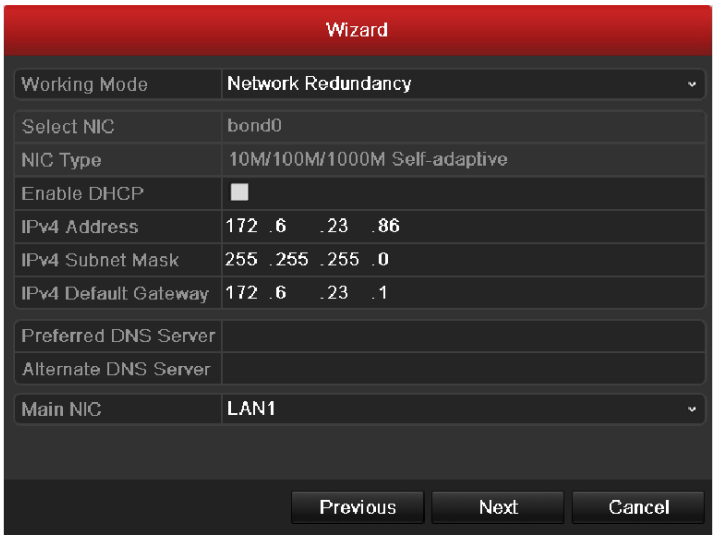


Figure 2.4 Network Configuration

7. Click **Next** button after you configure the network parameters to enter the following interface to enable RAID if required, shown in Figure 2.5.

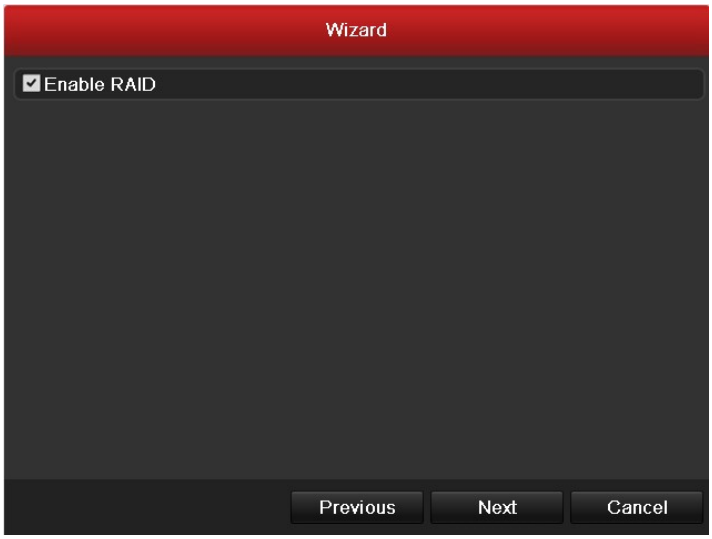


Figure 2.5 Enable RAID

8. Click **Next** button to enter the array configuration interface.

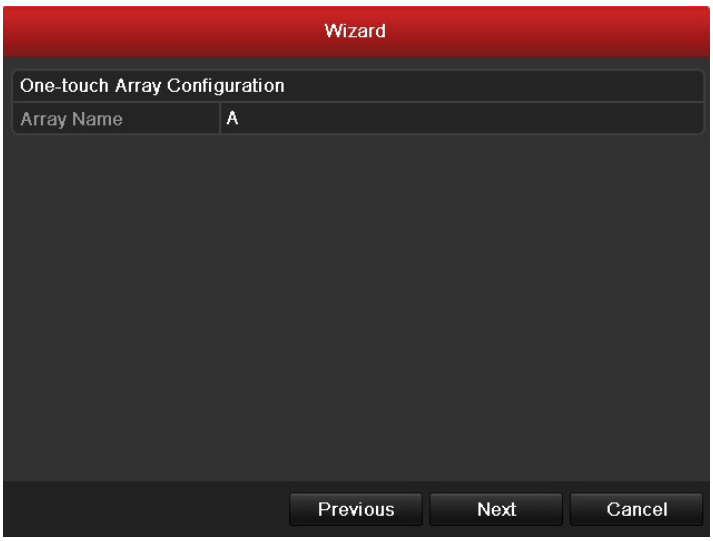


Figure 2.6 Edit Array Name

Note: When the One-touch Array Configuration is selected, the device can automatically enable the installed HDDs for array creation. As the default array type is RAID 5, thus at least 3 hard disks must be installed on the device.

9. To initialize the HDD, click the **Init** button. Initialization will remove all the data saved in the HDD.

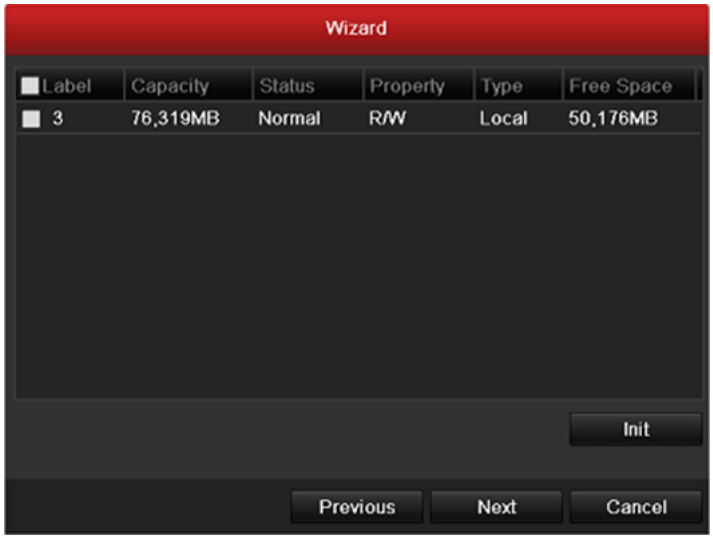


Figure 2.7 HDD Management

10. To initialize the HDD, click the **Init** button. Initialization removes all the data saved in the HDD.
11. Click **Next** button to enter the **Adding IP Camera** interface.
12. Click **Search** to find online IP Camera. Select the IP camera to be added, and click the **Add** button.

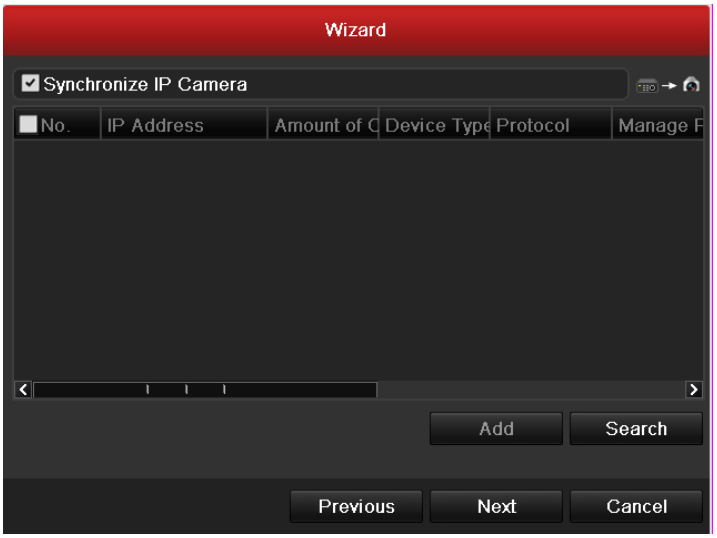


Figure 2.8 Record Settings

13. Click **Next** button. Configure the recording for the searched IP Cameras.

14. Click **Copy** to copy the settings to other channels, as shown in Figure 2.9.

Figure 2.9 Copy Record Settings

15. Click **OK** to complete the startup Setup Wizard.

2.2 Adding and Connecting the IP Cameras

2.2.1 Adding the IP Cameras

Purpose:

The main function of the NVR is to connect the network cameras and record the video got from it. So before you can get a live view or record of the video, you should add the network cameras to the connection list of the device.

Before you start:

Ensure the network connection is valid and correct. For detailed checking and configuring of the network, please see *Chapter 9.3 Checking Network Traffic* and *Chapter 9.4 Network Detection.*

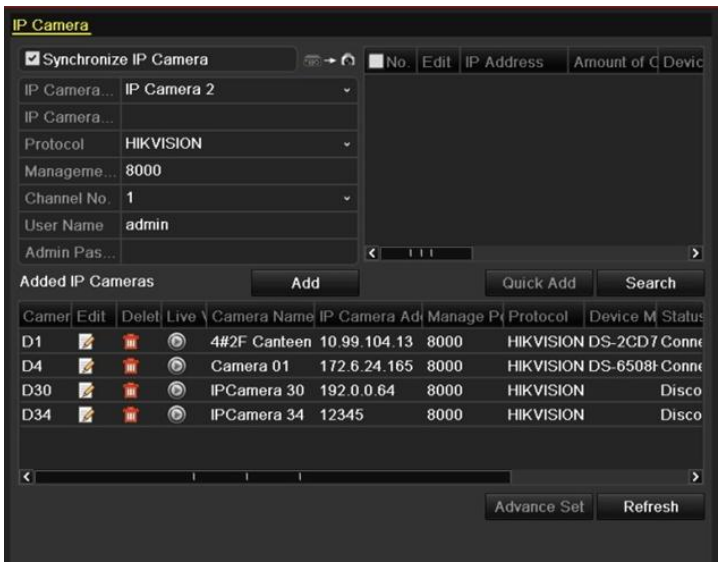
Steps:

1. Enter the Camera Management interface.

   Menu> Camera> Camera

2. To add the online cameras with same network segment:

   1) Click **Search** to search the online cameras.



   2) Check the checkbox of certain cameras to be added.

   3) Click **Quick Add** to add the camera.

3. To add other IP cameras:

   1) On the left side of the interface, you can enter the IP address, protocol, management port, user name, password and other information of the IP camera to be added.

   2) Click **Add** to add the camera.

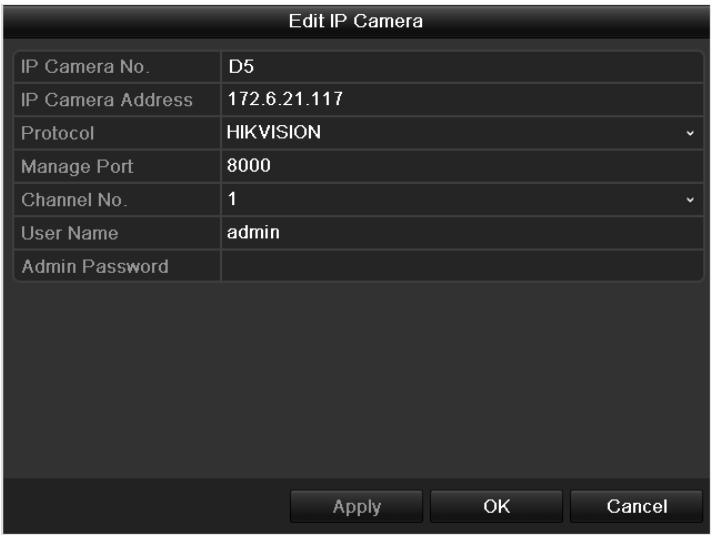
      Note: If you check the Synchronize IP Camera checkbox, the default settings of the NVR for the IP camera is applied to the added camera.

2.2.2 Configuring the Connection of IP Cameras

After the adding of the IP cameras, the basic information of the camera lists on the page, you can configure the basic setting of the IP cameras.

Steps:

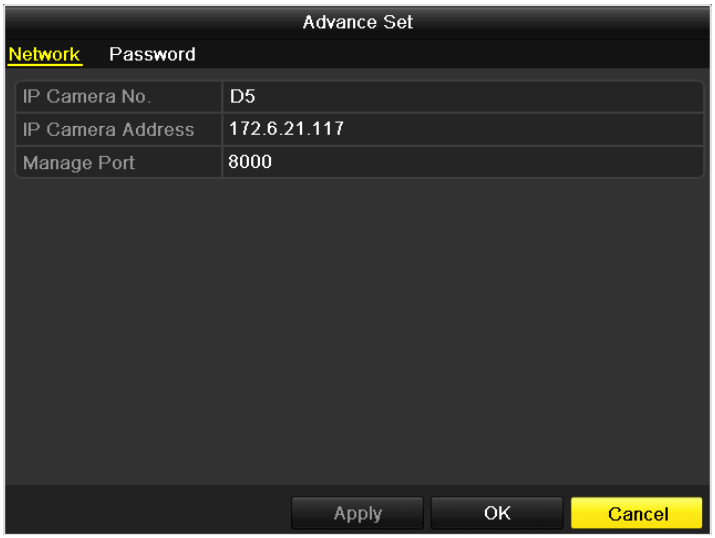
1. Click the icon to edit the parameters; you can edit the IP address, protocol and other parameters.



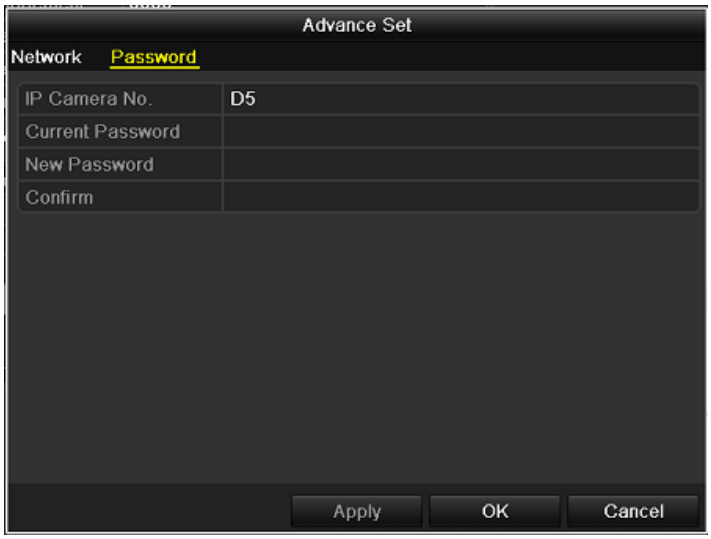
2. Click apply to save the settings and click **OK** to exit the editing interface.

To edit more parameters:

1. Select an IP camera from the list and click the **Advance Set** icon.



2. You can edit the network information and the password of the camera.



3. Click **Apply** to save the settings and click **OK** to exit the interface.

Description of the icons:

: Edit basic parameters of the selected camera.

: Delete the IP camera.

: Get the live view of the camera.

C H A P T E R 3

Live View

3.1 Introduction of Live View

Live view shows you the video image getting from each camera in real time. The NVR automatically enters Live View mode when powered on. It is also at the very top of the menu hierarchy, thus pressing the ESC many times (depending on which menu you're on) brings you to the Live View mode.

Live View Icons

In the live view mode, there are icons at the right top of the screen for each channel, showing the status of the record and alarm in the channel, so that you can know whether the channel is recorded, or whether there are alarms occur as soon as possible.

Table 3.1 Description of Live View Icons

Icons	Description
	Alarm (video loss, tampering, motion detection or sensor alarm)
	Record (manual record, schedule record, motion detection or alarm triggered record)
	Alarm & Record

3.2 Operations in Live View Mode

3.2.1 Using the Mouse in Live View

In live view mode, use the mouse to right-click on the window to access the following menu:

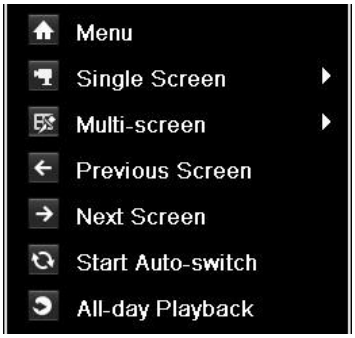


Figure 3.1 Right-click Menu

The functions are listed below.

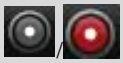
- **Menu**: Enter the main menu.
- **Single Screen**: Switch to the single full screen by choosing channel number from the dropdown list.
- **Multi-screen:** Show multiple screens on the monitor simultaneously.
- **Previous Screen:** Show the previous live view screen.
- **Next Screen:** Show the next live view screen.
- **Start Auto-switch:** The screen is auto switched to the next one.
  Note: You must set the dwell time for each screen under Menu>Configuration>Live View>Dwell Time menu before enabling the auto-switch.
- **All-day Playback:** Play back the recorded videos for current day.

3.2.2 Quick Setting Toolbar in Live View Mode

On the screen of each channel, there is a quick setting toolbar which shows when you single click the mouse in the corresponding screen.

Figure 3.2 Quick Setting Toolbar

Table 3.2 Description of Quick Setting Toolbar Icons

Icons	Description	Icons	Description	Icons	Description
	Start/Stop Manual Record		Instant Playback		Mute/Audio on
	Capture		PTZ Control		Digital Zoom
	Image Settings		Close the Toolbar		

Instant Playback:

The Instant Playback only shows the video files recorded in last five minutes. If no record is found, it means there is no record during the last five minutes.

Digital Zoom:

The Digital Zoom can zoom in the selected area to the full screen. You can left click and draw to select the area to zoom in, as shown in Figure 3.2.

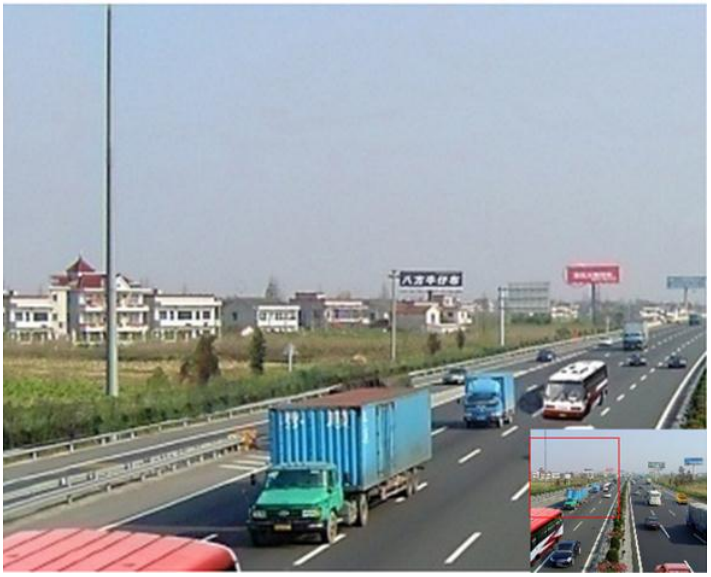


Figure 3.2 Digital Zoom

Image Settings:

The Image Settings can be selected to enter the Image Settings menu.

Figure 3.3 Image Settings

You can move the sliding bar to set the image parameters including brightness, contrast, saturation and hue Click the **Restore** button to restore the previous settings.

3.3 Adjusting Live View Settings

Purpose:

Live View settings can be customized according to different needs. You can configure the output interface, dwell time for screen to be shown, mute or turning on the audio, the screen number for each channel, etc.

Steps:

1. Enter the Live View Settings interface.

   Menu> Configuration> Live View

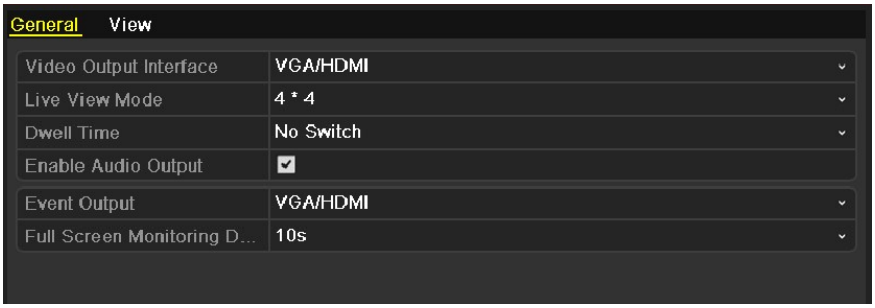


Figure 3.4 Live View-General

Configure the following settings:

- **Video Output Interface:** The video output interface (VGA/HDMI) for parameters configuration.
- **Live View Mode:** Set the display mode to be used for Live View.
- **Dwell Time:** The duration time in seconds between switching of channels when enabling auto-switch in Live View.
- **Enable Audio Output:** Enable/disable audio output for the selected video output interface.
- **Event Output:** Set the output to show event video.
- **Full Screen Monitoring Dwell Time:** The time in seconds to show alarm event screen.

2. Set Camera Order.

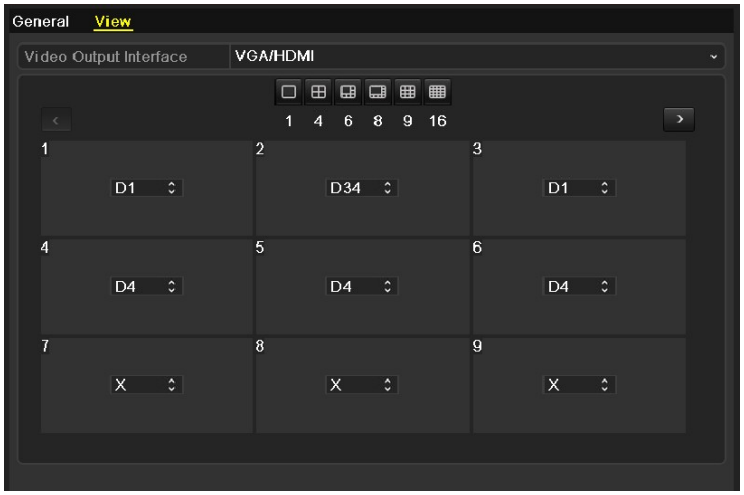


Figure 3.5 Live View- Camera Order

To set the camera order:

1) Click **View** to enter the camera order settings interface.

2) Click the up and down button at each screen to select the channel you would like to display. Setting an 'X' means the channel will not be displayed.

3) Click the **Apply** button to save the setting.

3.4 User Logout

Purpose:

After logging out, the monitor turns to the live view mode and if you want to do some operation, you need to enter user name and password to log in again.

Steps:

1. Enter the **Shutdown** menu.

   Menu>Shutdown

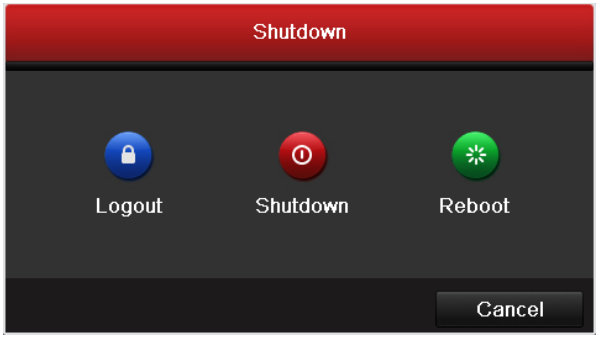


Figure 3.6 Shutdown

2. Click **Logout**.

   Note: After you have logged out the system, menu operation on the screen is invalid. It is required to input a user name and password to unlock the system.

C H A P T E R 4

PTZ Controls

4.1 Configuring PTZ Settings

Purpose:

Follow the procedure to set the parameters for PTZ. The configuring of the PTZ parameters should be done before you control the PTZ camera.

Steps:

1. Enter the PTZ Settings interface.

   Menu >Camera> PTZ

Figure 4.1 PTZ- General

2. Choose the camera for PTZ setting from the **Camera** dropdown list.
3. Choose the protocol and address of the PTZ camera.

   Note: All other parameters of the camera are not configurable.
4. Click **Apply** button to save the settings.

4.2 Setting PTZ Presets, Patrols & Patterns

Before you start:

Please make sure that the presets, patrols and patterns should be supported by PTZ protocols.

4.2.1 Customizing Presets

Purpose:

Follow the steps to set the Preset location which you want the PTZ camera to point to when an event takes place.

Steps:

1. Enter the PTZ Control interface.

   Menu>Camera>PTZ>More Settings

Figure 4.2 PTZ- More Settings

2. Use the directional button to wheel the camera to the location where you want to set preset.
3. Click the round icon before **Save Preset**.
4. Click the preset number to save the preset.

Repeat the steps2-4 to save more presets. If the number of the presets you want to save is more than 17, you can click […] and choose the available numbers.

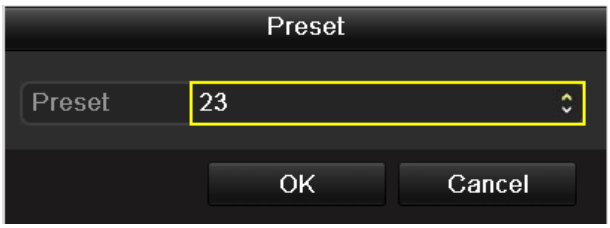


Figure 4.3 More Presets

4.2.2 Calling Presets

Purpose:

This feature enables the camera to point to a specified position such as a window when an event takes place.

Call preset in the PTZ setting interface:

Steps:

1. Enter the PTZ Control interface.
   Menu>Camera>PTZ>More Settings
2. Check the round icon before **Call Preset**.

Figure 4.4 PTZ- Call Preset

3. Click the preset number to call the current preset.

Call preset in live view mode:

Steps:

1. Click the PTZ Control icon in the quick settings bar to enter the PTZ settings menu in live view mode.

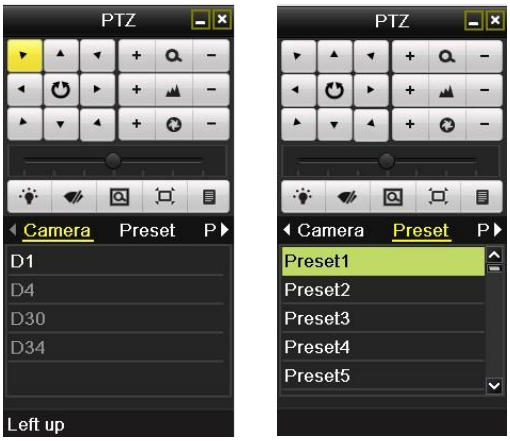


Figure 4.5 PTZ Toolbar

2. Select the C**amera** in the list on the menu.
3. Select the preset in the **Preset** list.

4.2.3 Customizing Patrols

Purpose:

Patrols can be set to move the PTZ to different key points and have it stay there for a set duration before moving on to the next key point. The key points are corresponding to the presets. The presets can be set following the steps above in ***Customizing Presets***.

Steps:

1. Enter the PTZ Control interface.
   Menu>Camera>PTZ>More Settings
2. Select patrol number.
3. Select the under Patrol option box to add key points for the patrol.

Figure 4.6 PTZ- Add Key Point

4. Configure key point parameters, such as the key point No., duration of staying for one key point and speed of patrol. The key point is corresponding to the preset. The **Key Point No.** determines the order at which the PTZ will follow while cycling through the patrol. The **Duration** refers to the time span to stay at the corresponding key point. The **Speed** defines the speed at which the PTZ will move from one key point to the next.

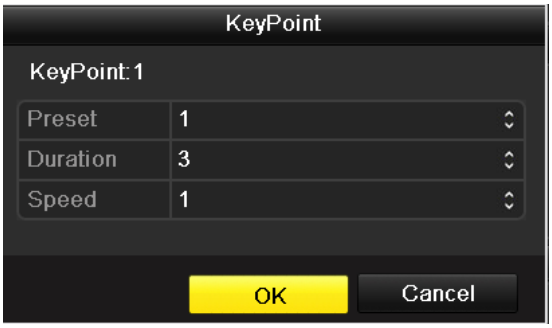


Figure 4.7Key Point Configuration

5. Click **OK** to save the key point to the patrol.

Repeat the above steps to add more key points.

You can also delete all the key points by clicking the trash icon

Figure 4.8 Key Point Deletion

4.2.4 Calling Patrols

Purpose:

Calling a patrol makes the PTZ to move according the predefined patrol path.

Calling patrol in the PTZ setting interface:

Steps:

1. In the PTZ setting interface.

   Menu> Camera> PTZ> More Settings

2. Select the patrol number, and then click to call the patrol.
3. Click to stop it.

Figure 4.9 Calling Patrol

Calling patrol in live view mode:

Steps:

1. Click PTZ Control icon on the quick setting toolbar, to show the PTZ control toolbar.
2. Choose **Patrol** on the control bar.
3. Click the patrol you want to call.

Figure 4.10 PTZ Toolbar- Patrol

4.2.5 Customizing Patterns

Purpose:

Patterns can be set by recording the movement of the PTZ. You can call the pattern to make the PTZ movement according to the predefined path.

Steps:

1. Enter the PTZ Control interface.
   Menu>Camera>PTZ>More Settings
2. Choose pattern number in the option box.

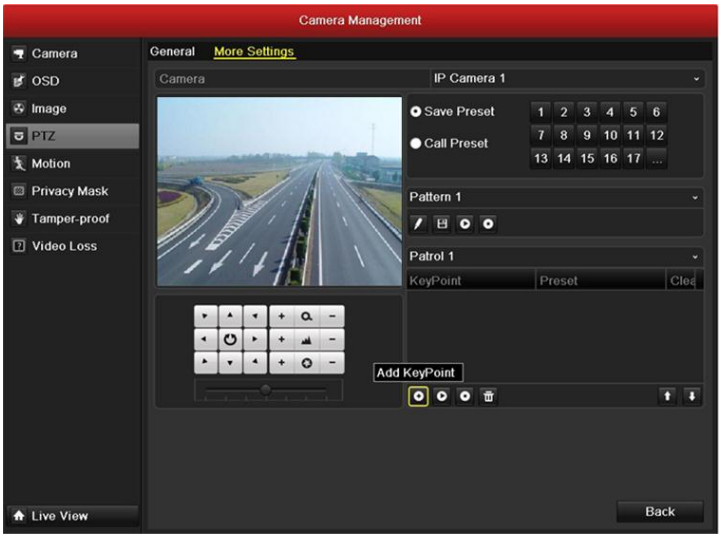


Figure 4.11 PTZ- Pattern

3. Click , and use your mouse to drag the image or click the eight directional buttons in the control box under the image to move the PTZ camera.
   The movement of the PTZ is recorded as the pattern.
4. Click to save the pattern.
   Repeat the above steps to save more patterns.

4.2.6 Calling Patterns

Purpose:

Follow the procedure to move the PTZ camera according to the predefined patterns.

Calling pattern in the PTZ setting interface

Steps:

1. Enter the PTZ Control interface.
2. Select the pattern number.
3. Click , then the PTZ moves according to the pattern. Click to stop it.

Figure 4.12 PTZ- Calling Pattern

Call pattern in live view mode.

Steps:

1. In the live view mode, press PTZ control on the front panel or on the remote control, or click PTZ Control icon on the quick setting toolbar.
2. And then choose **Pattern** on the control bar.
3. Click the pattern number you want to call.

Figure 4.13 PTZ Toolbar- Pattern

4.3 PTZ Control Toolbar

In the Live View mode, you can press the PTZ Control button on the remote control or select the PTZ Control

icon to enter the PTZ toolbar.

Figure 4.14 PTZ Toolbar

Table 4.1 Description of the PTZ toolbar icons

Icon	Description	Icon	Description	Icon	Description
	Direction button and the auto-cycle button		Zoom+, Focus+, Iris+		Zoom-, Focus-, Iris-
	The speed of the PTZ movement		Light on/off		Wiper on/off
	3D-Zoom		Middle	Preset	Preset
Patrol	Patrol	Pattern	Pattern		Menu
	Previous item		Next item		Start pattern/patrol
	Stop the patrol or pattern movement		Minimize windows		Exit

C H A P T E R 5

Record and Capture Settings

5.1 Configuring Encoding Parameters

Purpose:

By configuring the encoding parameters you can define the parameters which affect the image quality, such as the transmission stream type, the resolution and so on.

Before you start:

1. Make sure that the HDD has already been installed. If not, please install a HDD and initialize it. (Menu>HDD>General)

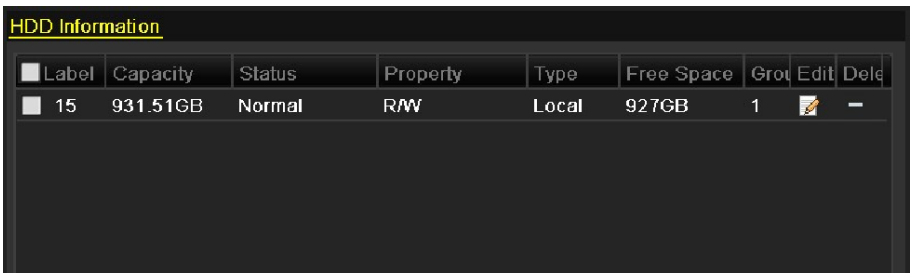


Figure 5.1 HDD- General

2. Check the storage mode of the HDD

1) Click **Advance** to check the storage mode of the HDD.

2) If the HDD mode is *Quota*, please set the maximum record capacity and maximum picture capacity. For detailed information, see *Chapter 10.5 Configuring Quota Mode*.

3) If the HDD mode is *Group*, you should set the HDD group. For detailed information, see *Chapter 5.9 Configuring HDD Group for Recording and Capture.*

Figure 5.2 HDD- Advanced

Steps:

1. Enter the Record settings interface to configure the encoding parameters:

Menu>Record>Encoding

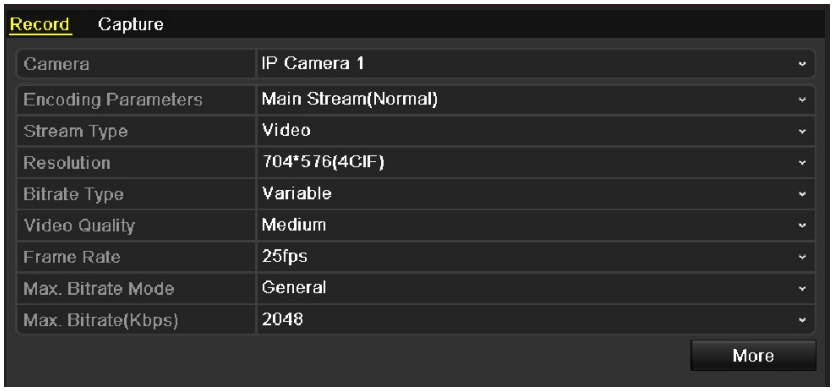


Figure 5.3 Record Encoding

2. Encoding Parameters for Recording

1) Select **Record** to configure. You can configure the stream type, the resolution, the video quality on demand.

2) Click **More** to configure the pre-record, post-record time, expired time, redundant record/capture and whether you want to record audio.

- **Pre-record:** The time you set to record before the scheduled time or event. For example, when an alarm triggered the recording at 10:00, if you set the pre-record time as 5 seconds, the camera records it at 9:59:55.
- **Post-record:** The time you set to record after the event or the scheduled time. For example, when an alarm triggered the recording ends at 11:00, if you set the post-record time as 5 seconds, it records till 11:00:05.
- **Expired Time:** The expired time is the longest time for a record file to be kept in the HDD, if the deadline is reached, the file will be deleted. You can set the expired time to 0, and then the file will not be deleted. The actual keeping time for the file should be determined by the capacity of the HDD.
- **Redundant Record/ Capture:** Enabling redundant record or capture means you save the record and captured picture in the redundant HDD. See *Chapter 5.8 Configuring Redundant Record / Capture*.

  Note: When the device is configured with RAID function, the **Redundant Record/Capture** is unavailable.

Figure 5.4 Record Encoding- More

3) Click **Apply** to save the settings.

4) Click **OK** to back to the upper level menu.

3. Encoding Parameters for Capture

1) Select the **Capture**.

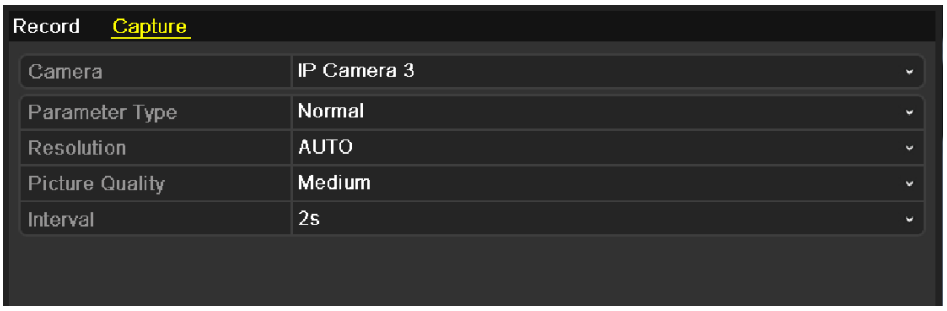


Figure 5.5 Capture Encoding

2) Configure the parameters, including the parameter type (Normal/Event), resolution (Auto), picture quality and interval.

Note: The interval is the time period between two capturing actions. You can configure all the parameters on this menu on your demand.

3) Click **Apply** to save the settings.

4. Configure disk overwrite mode.

1) Enter the Advanced settings interface.

Menu>Record>Encoding

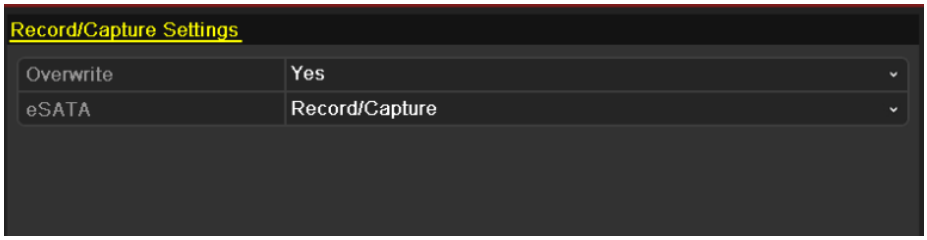


Figure 5.6 Configure Overwrite Mode

2) Select the overwrite mode to **Yes** or **No**.

3) Click **Apply** to save the settings.

Note: Enabling the Overwrite setting will cause recorded files to be overwritten once the HDD is full.

5.2 Configuring Record/Capture Schedule

Purpose:

Set the record schedule, and then the camera automatically starts/stops recording according to the configured schedule.

Note: In this chapter, we take the record schedule procedure as an example, and the same procedure can be applied to configure schedule for both automatic recording and capture. To schedule the automatic capture, you need to choose the Capture tab in the **Schedule** interface.

Steps:

1. Enter the Record Schedule interface.

Menu>Record >Schedule

2. Configure Record/Capture Schedule

1) Select Record/Capture Schedule.

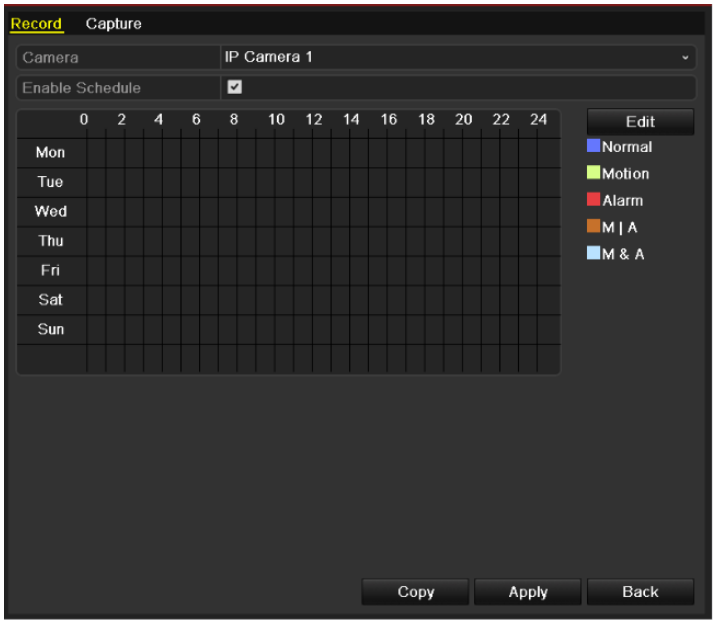


Figure 5.7 Record/Capture Schedule

2) Choose the camera you want to configure.

3) Select the checkbox after the **Enable Schedule** item.

4) Click **Edit**.

5) In the message box, you can choose the day to which you want to set schedule.

6) To schedule an all-day recording, check the checkbox after the **All Day** item.

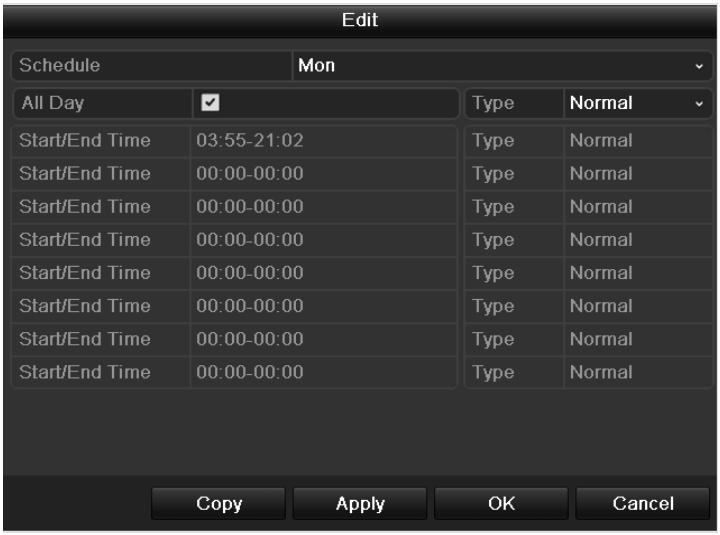


Figure 5.8 Edit Schedule

7) To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time.

Note: Up to 8 periods can be configured for each day. And the time periods can't be overlapped each other.

Repeat the above steps5)-7) to schedule recording/capture for other days in the week. If the schedule can also be applied to other days, click **Copy**.

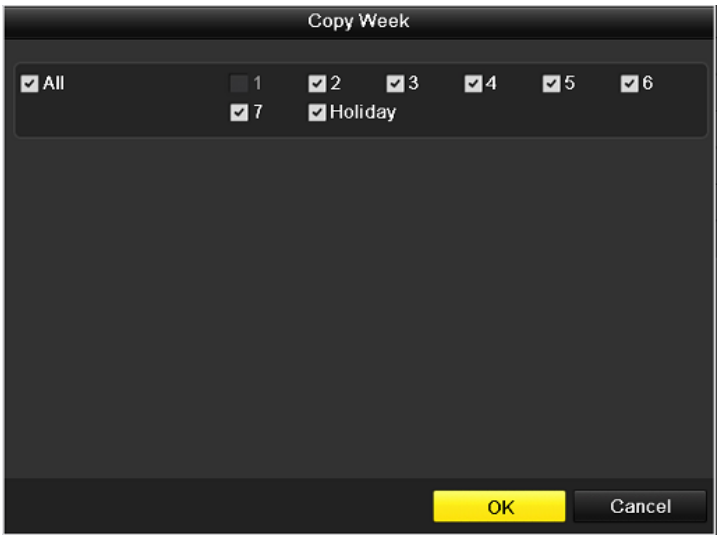


Figure 5.9 Copy Schedule to Other Days

8) Click **OK** to save setting and back to upper level menu.

9) Click **Apply** in the Record Schedule interface to save the settings.

You can repeat steps5)-8) to set schedule for other channels. If the settings can also be used to other channels, click **Copy**, and then choose the channel to which you want to copy.

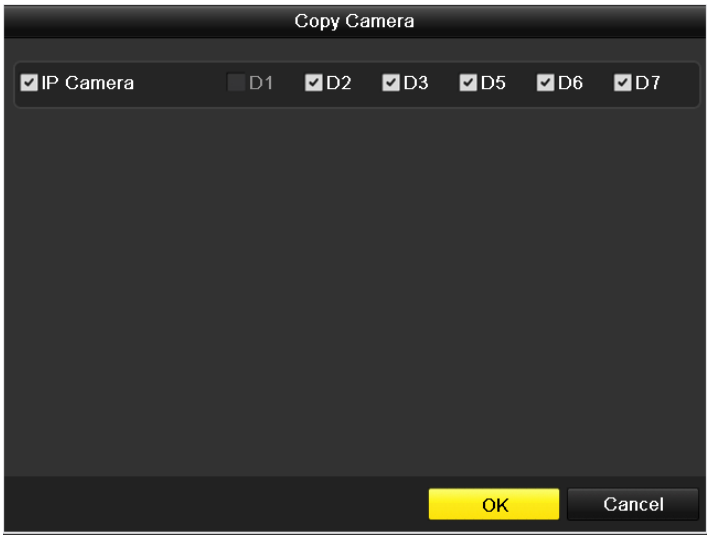


Figure 5.10 Copy Schedule to Other Channels

5.3 Configuring Motion Detection Record and Capture

Purpose:

Follow the steps to set the motion detection parameters. In the live view mode, once a motion detection event takes place, the NVR can analyze it and do many actions to handle it. Enabling motion detection function can trigger certain channels to start recording, or trigger full screen monitoring, audio warning, notify the surveillance center and so on. In this chapter, you can follow the steps to schedule a record which triggered by the detected motion.

Note: The encoding is done by the connected front end encoding devices (e.g., camera, dome), herein the NVR, only provides the configuration panel.

The motion detection must be supported by the connected dome/camera.

Steps:

1. Enter the Motion Detection interface.

   Menu>Camera>Motion

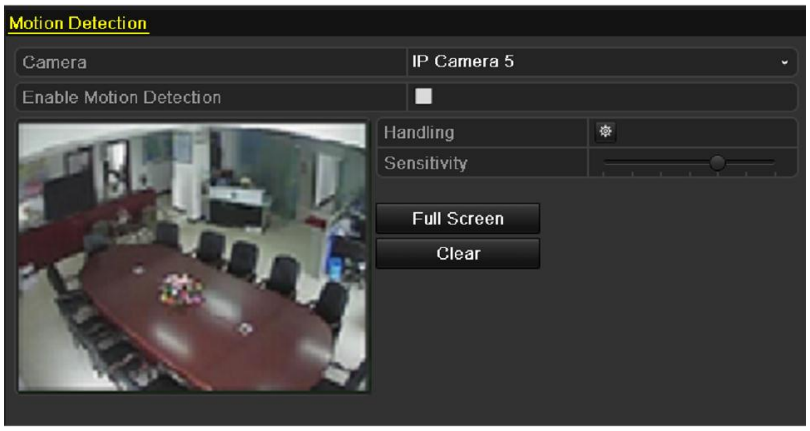


Figure 5.11 Motion Detection

2. Configure Motion Detection:
   1) Choose camera you want to configure.
   2) Check the checkbox of **Enable Motion Detection**.
   3) Drag and draw the area for motion detection by mouse. If you want to set the motion detection for all the area shot by the camera, click **Full Screen**. To clear the motion detection area, click **Clear**.

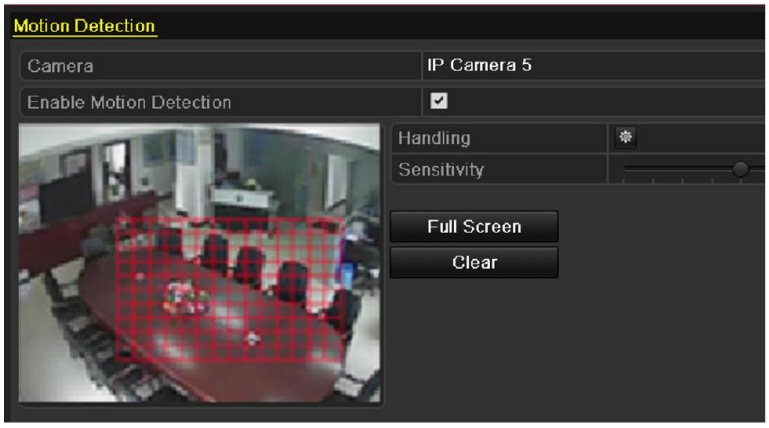


Figure 5.12 Motion Detection- Area Settings

4) Click the icon of **Handling** to enter the **Handling** interface.

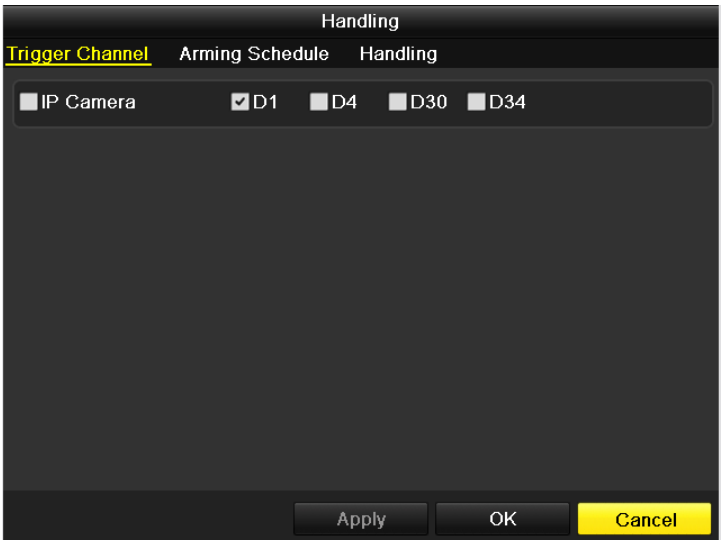


Figure 5.13 Motion Detection Handling

5) Select the channels which you want the motion detection event to trigger recording.
6) Click **Apply** to save the settings.
7) Click **OK** to back to the upper level menu.
8) Exit the Motion Detection menu.

3. Enter Schedule settings interface.

Menu> Record> Schedule>Record/Capture Schedule

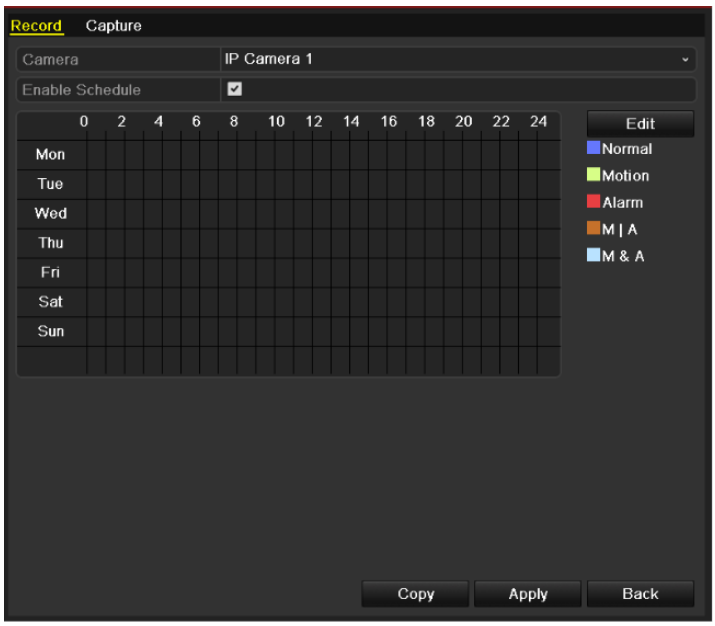


Figure 5.14 Record Schedule

1) Check the checkbox after the **Enable Schedule** item.
2) Click **Edit** to enter the schedule edit interface.
3) On the interface, you can choose the day to which you want to set schedule.
4) Set the **Type** as **Motion**.
5) To schedule an all-day recording, check the checkbox after the **All Day** item.

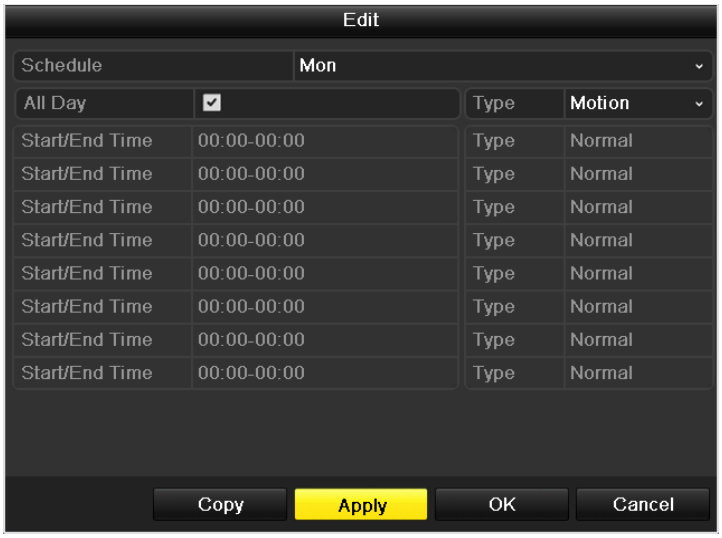


Figure 5.15 Edit Schedule- All Day

6) To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time.

Note: Up to 8 periods can be configured for each day. And the time periods can't be overlapped each other.

Repeat the above steps3)-6) to schedule motion detection triggered recording/capture for all the week. If the schedule can also be set to other days, click **Copy**.

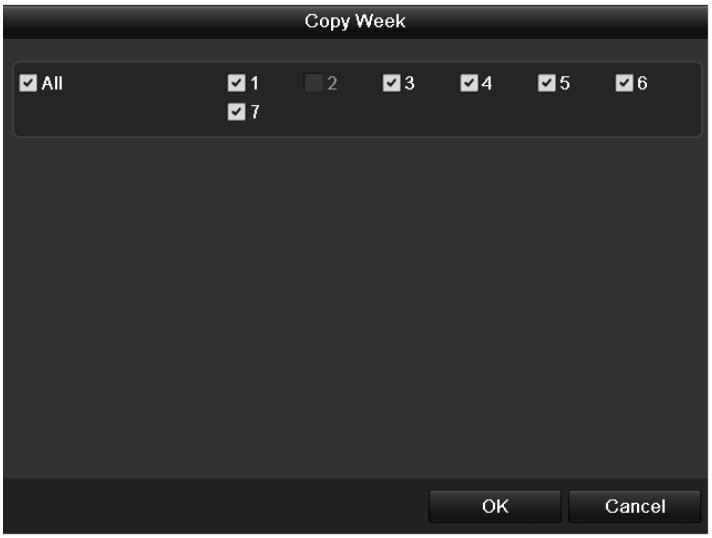


Figure 5.16 Copy Schedule to Other Days

7) Click **OK** to back to upper level menu. And the edited schedule for motion detection record is displayed on the interface.

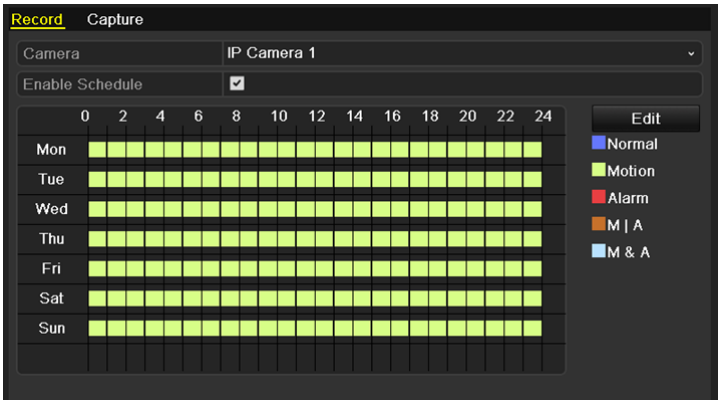


Figure 5.17 Edited Schedule for Motion Detection

You can repeat steps to set schedule for other channels, if the settings can also be used to other channels, click **Copy**, and then choose the channel to which you want to copy.

Figure 5.18 Copy Schedule to Other Channels

5.4 Configuring Alarm Triggered Record and Capture

Purpose:

Follow the procedure to configure alarm triggered recording or capture.

Steps:

1. Enter the Alarm setting interface.

   Menu> Configuration> Alarm

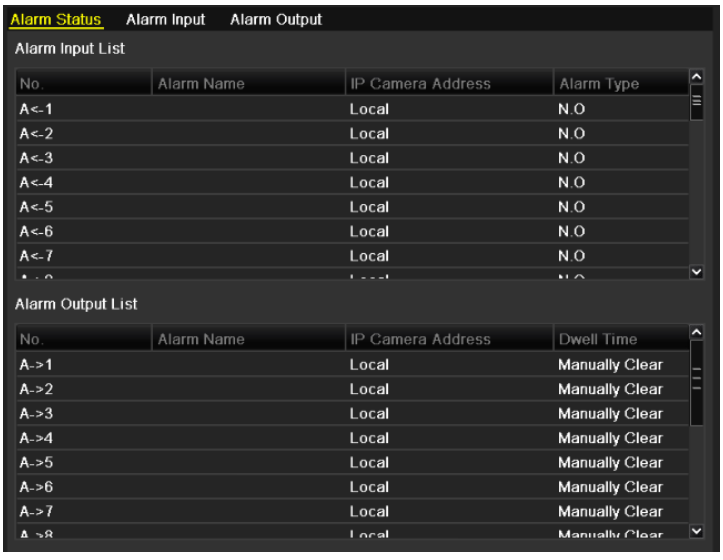


Figure 5.19 Alarm Settings

2. Click **Alarm Input**.

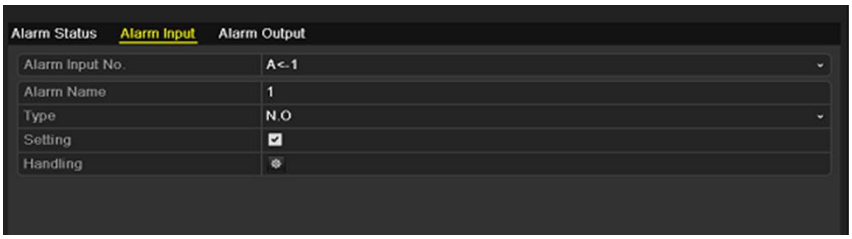


Figure 5.20 Alarm Settings- Alarm Input

1) Select Alarm Input number and configure alarm parameters.
2) Choose N.O (normally open) or N.C (normally closed) for alarm type.
3) Check the checkbox for Setting.
4) Click the icon of **Handling**.

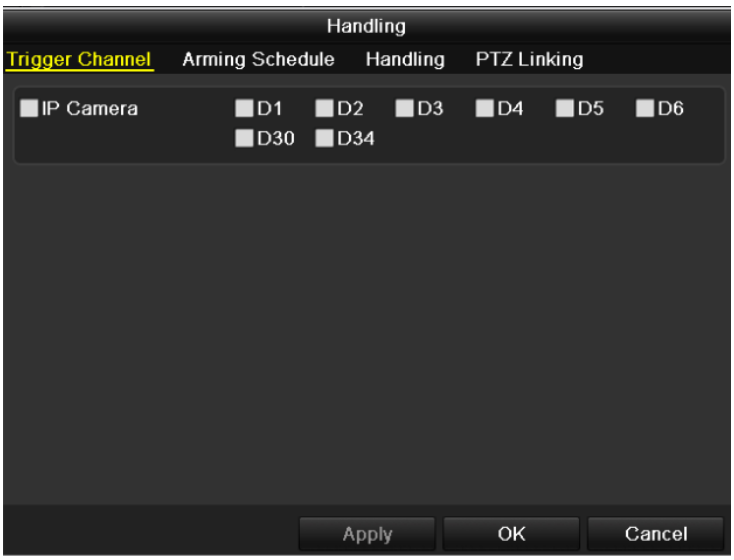


Figure 5.21 Alarm Handling

5) Choose the alarm triggered recording channel.
6) Check the checkbox to select channel.
7) Click **Apply** to save settings.
8) Click **OK to** back to the upper level menu.

Repeat the above steps to configure other alarm input parameters.

If the setting can also be applied to other alarm inputs, click **Copy** and choose the alarm input number.

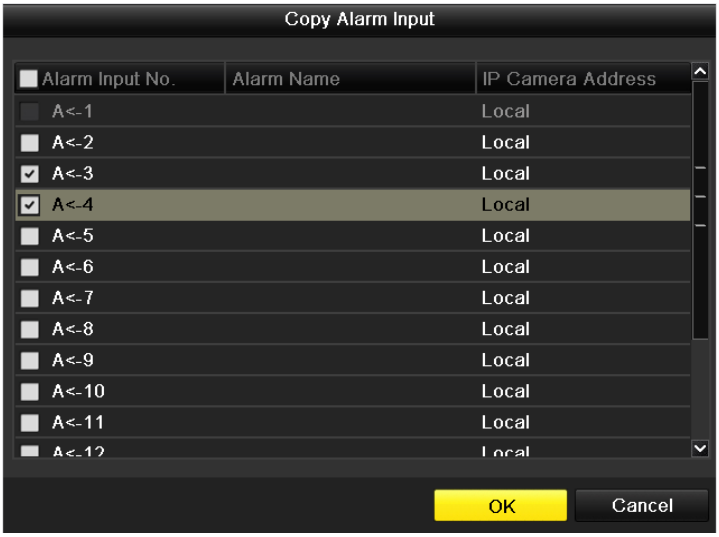


Figure 5.22 Copy Alarm Input

3. Enter Record/Capture Schedule setting interface.

Menu> Record> Schedule

1) Click Record/Capture Schedule

2) Check the checkbox after the **Enable Schedule**.

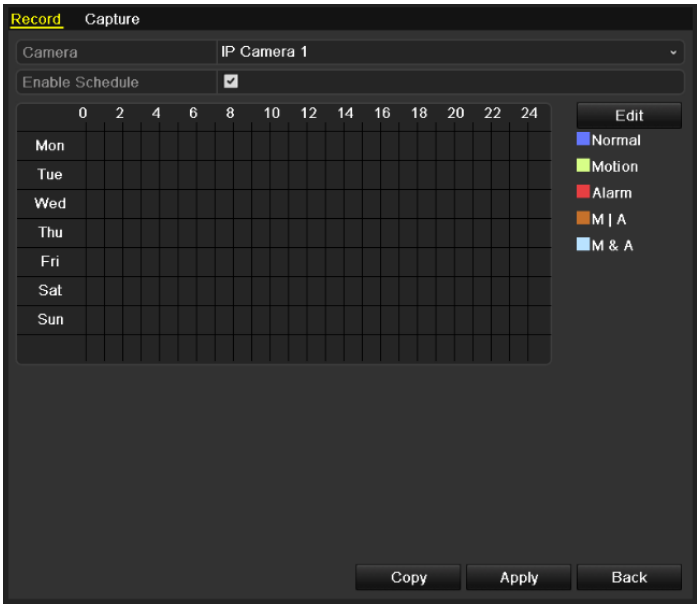


Figure 5.23 Record Schedule

3) Click **Edit**.

4) Set the **Type** to **Alarm**

5) In the message box, you can choose the day to which you want to set schedule.

6) To schedule an all-day recording, check the checkbox after the **All Day** item.

7) To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time.

Note: Up to 8 periods can be configured for each day. And the time periods can't be overlapped each other.

Repeat the above steps 4)-7) to schedule alarm triggered recording/capture for all the week.

If the schedule can also be set to other days, click **Copy**.

8) Click **OK** to back to the upper level menu.

5.5 Manual Record and Continuous Capture

Purpose:

Follow the steps to set parameters for the manual record and continuous capture. Using manual record and continuous capture, you need to manually cancel the record and capture. The manual recording and manual continuous capture is prior to the scheduled recording and capture.

Enter the Manual settings interface.

Menu> Manual

Figure 5.24 Manual Record

- Enable/Disable Manual Record

  Task1: Enable the manual record

  1) Select **Record** on the left bar.
  2) Click the status button before camera number to change OFF to ON.

  Task2: Disable manual record.

  Click the status button to change ON to OFF.

  Note: After rebooting all the manual records enabled are canceled.

- Enable/Disable the continuous capture

  Task1: Enable the continuous capture.

  1) Select **Continuous Capture** on the left bar.

Figure 5.25 Continuous Capture

2) Click the status button before camera number to change OFF to ON.

Task2: Disable the continuous capture.

Click the status button to change ON to OFF.

Note: After rebooting, all the continuous capture will be canceled.

5.6 Configuring Holiday Record and Capture

Purpose:

Follow the steps to configure the record or capture schedule on holiday for that year. You may want to have different plan for recording and capture on holiday.

Steps:

1. Enter the Record setting interface.
   Menu>Record
2. Choose **Holiday** on the left bar.

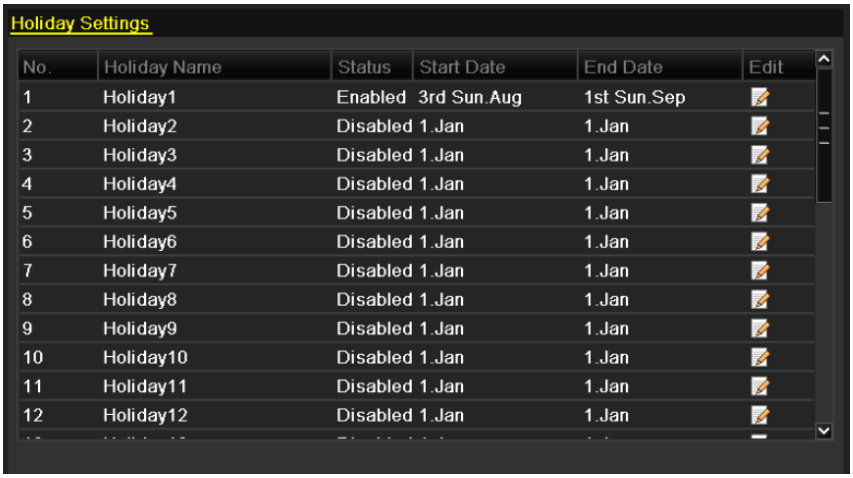


Figure 5.26 Holiday Settings

3. Enable Edit Holiday schedule.
   1) Click to enter the Edit interface.

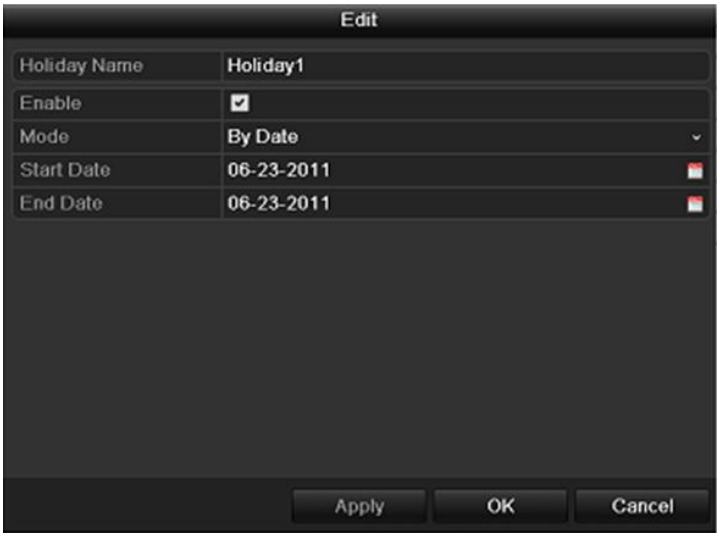


Figure 5.27 Edit Holiday Settings

   2) Check the checkbox after **Enable Holiday**.
   3) Select Mode from the drop-down list.
      There are three different modes for the date format to configure holiday schedule.
   4) Set the start and end date.

5) Click **Apply** to save settings.

6) Click **OK** to exit the Edit interface.

4. Enter Record/Capture Schedule settings interface.

Menu> Record> Schedule

1) Select **Record/Capture.**

2) Check the checkbox after **Enable Schedule**.

3) Click **Edit.**

4) Select **Holiday** from the **Schedule** drop-down list.

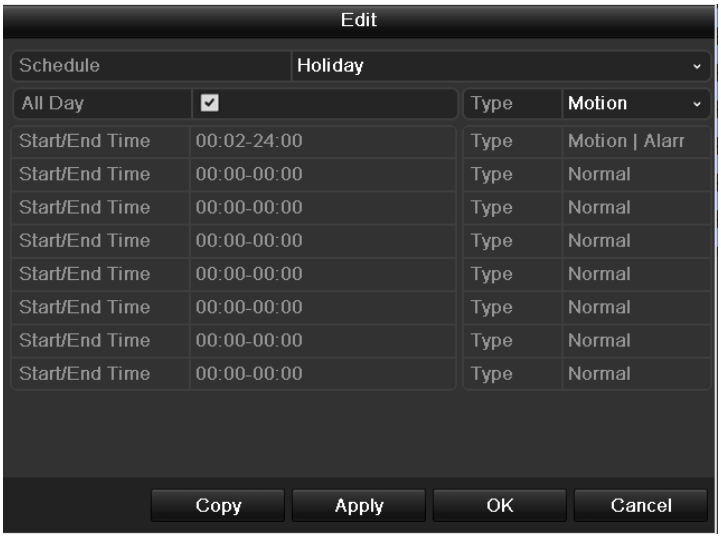


Figure 5.28 Edit Schedule- Holiday

5) Select **Motion** from the **Type** dropdown list.

6) If you need all day recording, check the **All Day** checkbox. Otherwise leave it blank.

7) Set start/end time for holiday schedule.

Note: Up to 8 periods can be configured for each day. And the time periods can't be overlapped each other.

In the time table of the channel, both holiday schedule and normal day schedule are displayed.

Repeat the above steps4)-7) to set Holiday schedule for other channel. If the holiday schedule can also be used to other channels, click **Copy** and choose the channel you want to apply the settings.

5.7 Configuring Other Recording and Capture Types

Purpose:

Other recording and capture types refer to the Motion | Alarm (motion or alarm) and Motion & Alarm triggered recording and capture.

For motion detection and alarm recording and capture, please refer to *Chapter 5.3* and *Chapter 5.4*. In this chapter, the configuration for Motion | Alarm (motion or alarm) and Motion & Alarm triggered recording and capture will be described only.

Steps:

1. Enter the Record setting interface.

   Menu > Record > Schedule

2. Select **Record/Capture.**

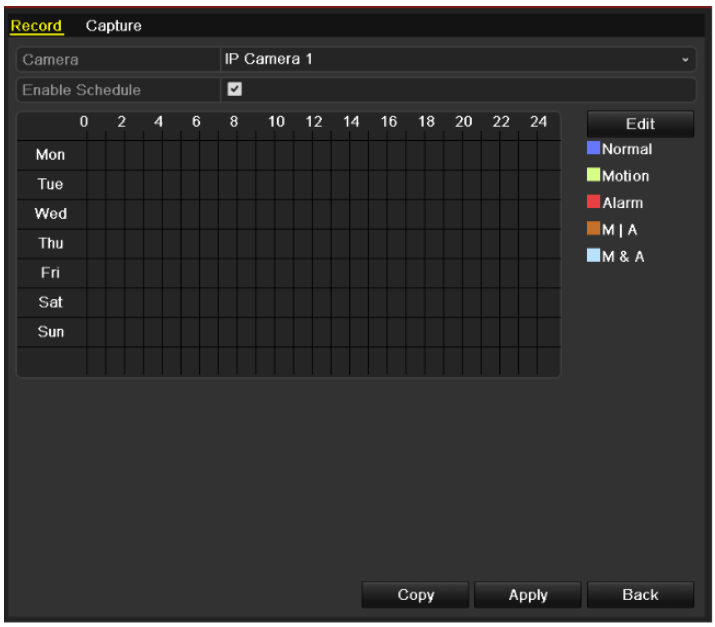


Figure 5.29 Record Schedule

3. Schedule Motion | Alarm or Motion & Alarm triggered recording.
   1) Select the channel you want to set schedule.
   2) Check the checkbox after **Enable Schedule**.
   3) Click **Edit**.
   4) Select Motion | Alarm or Motion & Alarm from the **Type** drop-down list.

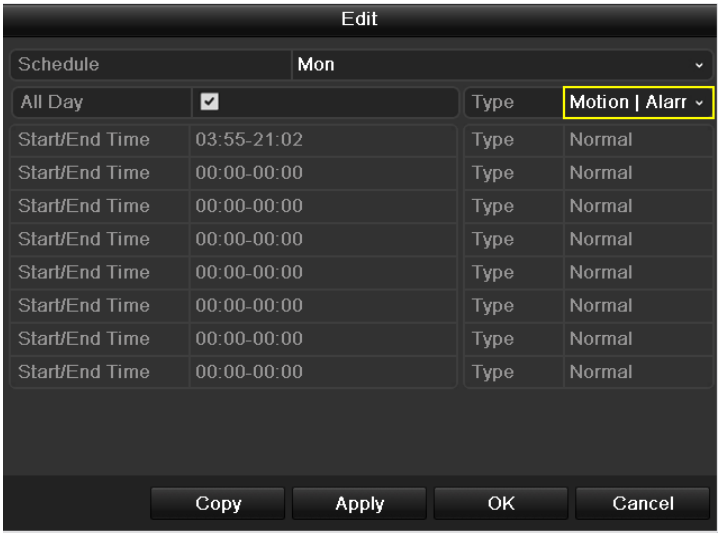


Figure 5.30 Edit Schedule- Motion| Alarm

5) To schedule an all-day recording, select the checkbox after the **All Day** item.

6) To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time.

Note: Up to 8 periods can be configured for each day. And the time periods can't be overlapped each other.

Repeat the above steps to schedule for all the week. If the schedule can also be applied to other days, click **Copy**.

7) Click **Apply** to save settings.

8) Click **OK** to back to the upper level menu.

Repeat the above steps to schedule Motion | Alarm or Motion & Alarm triggered recording/capture to other channels. If the setting can also be applied to other channels, click **Copy** and then choose the channel number.

5.8 Configuring Redundant Recording and Capture

Note: When the RAID function is enabled, the disk cannot be set to redundancy property. Please refer to *Chapter 10 RAID Configuration* for more information.

Purpose:

Enabling redundant recording and capture, which means saving the record files and captured pictures not only in the R/W HDD but also in the redundant HDD, will effectively enhance the data safety and reliability.

Steps:

1. Enter HDD Information interface.

Menu> HDD

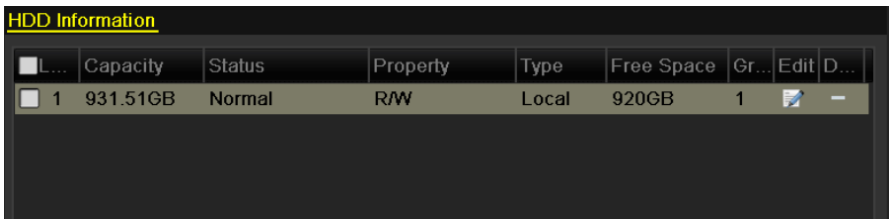


Figure 5.31 HDD General

2. Select the **HDD** and click to enter the Local HDD Settings interface.

1) Set the HDD property to Redundancy.

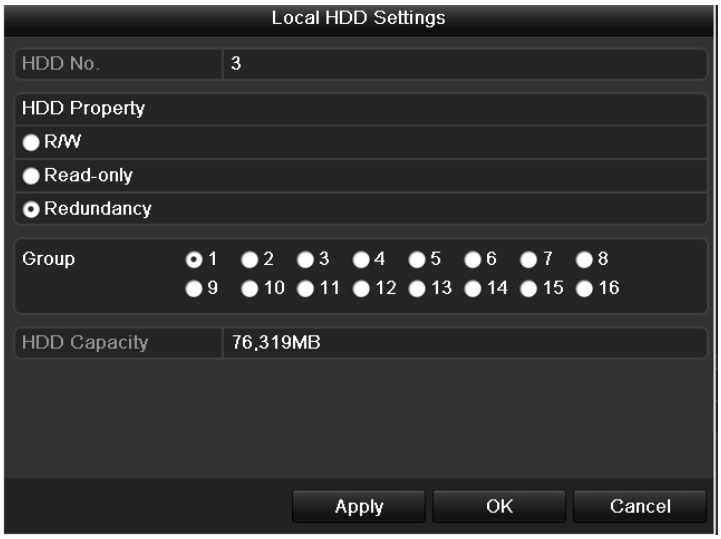


Figure 5.32 HDD General-Editing

2) Click **Apply** to save the settings.

3) Click **OK** to back to the upper level menu.

Note: You must set the Storage mode in the HDD advanced settings to Group before you set the HDD property to Redundant. For detailed information, please refer to *Chapter 11.4 Managing HDD Group*. There should be at least another HDD which is in Read/Write status.

3. Enter the Record setting interface.

Menu> Record> Encoding

1) Select **Record.**

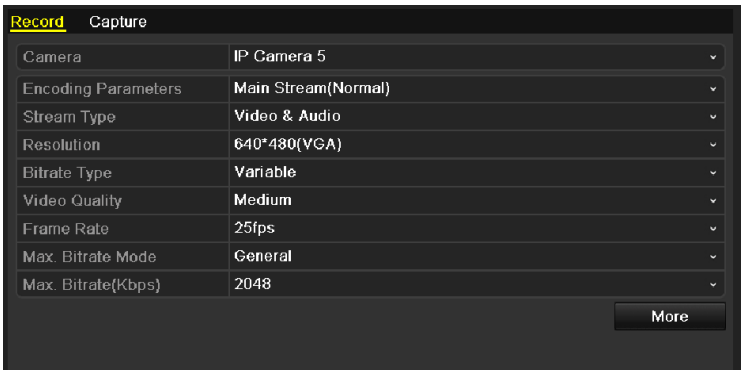


Figure 5.33 Encoding Record

2) Select Camera you want to configure.

3) Click **More Settings.**

Figure 5.34 Encoding Record- More

4) Set the **Redundant Record/Capture** to **Yes**.

5) Click **OK** to save settings and back to the upper level menu.

Repeat the above steps for configuring other channels.

5.9 Configuring HDD Group for Recording and Capture

Purpose:

You can group the HDDs and save the record files and captured pictures in certain HDD group.

Steps:

1. Enter HDD setting interface.

   Menu>HDD

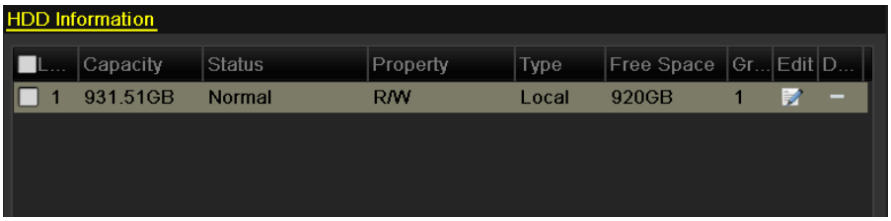


Figure 5.35 HDD General

2. Select **Advanced** on the left bar.
3. Check whether the storage mode of the HDD is Group. If not, set it to Group.
4. Click **General** in the left bar and configure HDD group.
   1) Click **General** tab in the left bar.
   2) Choose a group number for the HDD group.
   3) Click **Apply** and then in the pop-up message box, click **Yes** to save your settings.
   4) Click **OK** to back to the upper level menu.

   Refer to *Chapter 11.4 Setting Managing HDD Groups* for details.
5. Choose the Channels which you want to save the record files and captured pictures in the HDD group.
   1) Select **Advanced** on the left bar.

Figure 5.36 HDD Advanced

   2) Choose Group number in the dropdown list of **Record on HDD Group**
   3) Check the channels you want to save in this group.
   4) Click **Apply** to save settings.

After having configured the HDD groups, you can configure the Recording and Capture settings following the procedure provided in *Chapter 5.2-5.7*.

5.10 Files Protection

Purpose:

You can lock the recorded files or set the HDD property to Read-only to protect the record files from being overwritten.

Protect file by locking the record files:

Steps:

1. Enter Playback setting interface.

   Menu> Playback

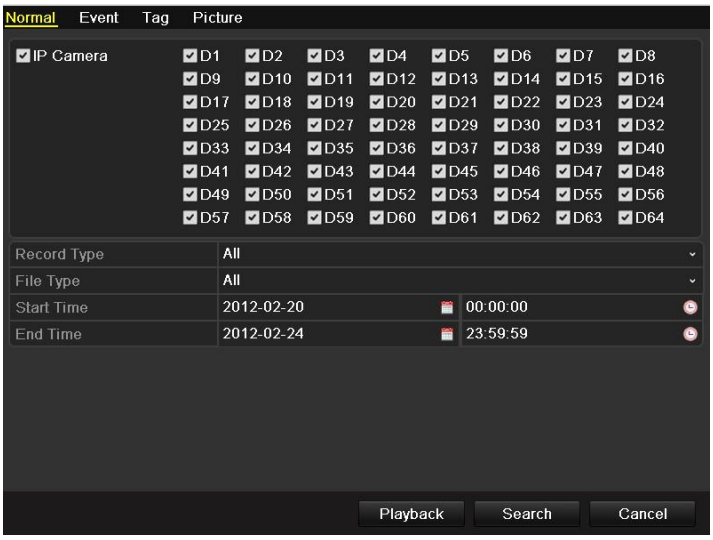


Figure 5.37 Playback

2. Select the channels you want to investigate by checking the checkbox to ☑.
3. Configure the record type, file type start/end time.
4. Click **Search** to show the results.

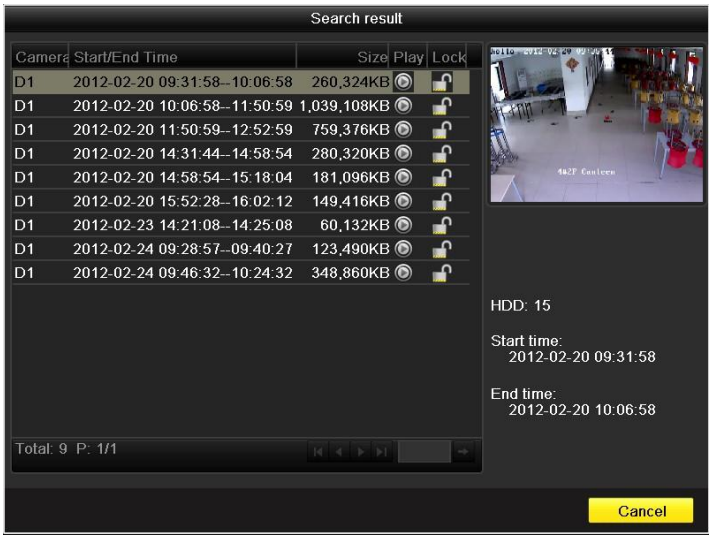


Figure 5.38 Playback- Search Result

5. Protect the record files.

1) Find the record files you want to protect, and then click the icon which will turn to , indicating that the file is locked.

Note: The record files of which the recording is still not completed can't be locked.

2) Click to change it to to unlock the file and the file is not protected.

Figure 5.39 Unlocking Attention

Protect file by setting HDD property to Read-only

Steps:

1. Enter HDD setting interface.

Menu> HDD

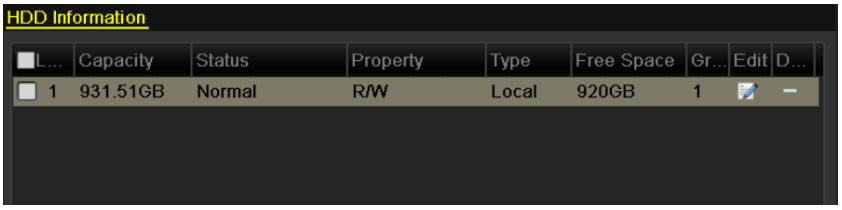


Figure 5.40 HDD General

2. Click to edit the HDD you want to protect.

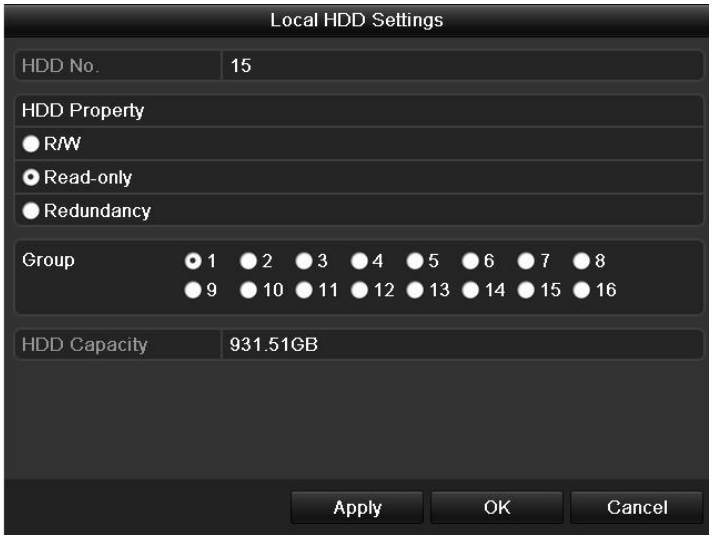


Figure 5.41 HDD General- Editing Property

Note: To edit HDD property, you need to set the storage mode of the HDD to Group. See *Chapter 10.4 Managing HDD Group*.

3. Set the HDD to Read-only.

4. Click **OK** to save settings and back to the upper level menu.

Note: You can't save any files in a Read-only HDD. If you want to save files in the HDD, change the

property to R/W.

Note: If there is only one HDD and is set to Read-only, the NVR can't record any files. Only live view mode is available.

If you set the HDD to Read-only when the NVR is saving files in it, then the file will be saved in next R/W HDD. If there is only one HDD, the recording will be stopped.

C H A P T E R 6

Playback

6.1 Playing Back Record Files

6.1.1 Playing Back by Channel

Purpose:

Play back the recorded video files of a specific channel in the live view mode. Channel switch is supported.

Instant playback by channel:

Steps:

Choose a channel in live view mode using the mouse and click the button in the quick setting toolbar.

Note: In the instant playback mode, only record files recorded during the last five minutes on this channel will be played back.

Figure 6.1 Instant Playback Interface

All-day Playback by channel

1. Enter the All-day Playback interface.

Mouse: right click a channel in live view mode and select All-day Playback from the menu, as shown in Figure 6.2.

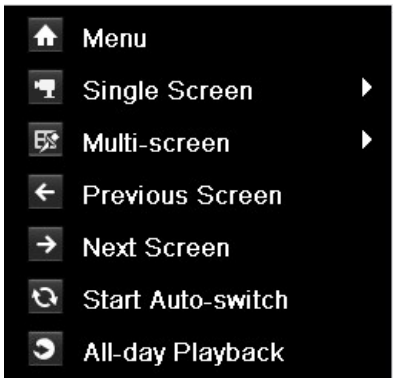


Figure 6.2 Right-click Menu under Live View

IR remote control: press **PLAY** button to play back record files of the channel under single-screen live view mode.

Under multi-screen live view mode, the recorded files of the top-left channel will be played back.

2. Playback management.

The toolbar in the bottom part of Playback interface can be used to control playing progress, as shown in Figure 6.3.

Figure 6.3 All-day Playback Interface

The channel and time selection menu displays by moving the mouse to the right of the playback interface. Click the channel(s) if you want to switch playback to another channel or execute simultaneous playback of multiple channels, as shown in Figure 6.4.

Figure 6.4 All-day Playback Interface with Channel List

Dates marked in colors:

11 : No record files in this day.

9 : There is record file(s) in this day (not current day).

10 : Mouse cursor is located.

Figure 6.5 Toolbar of All-day Playback

Table 6.1Detailed Explanation of All-day-playback Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
/	Audio on/Mute	/	Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Stop playing	/	Pause play/ Play/Single-frame play		30s forward
	30s reverse		Speed down		Speed up		Previous day
	Next day		Hide		Exit		Process bar
	Video type bar						

Notes:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: represents normal recording (manual or schedule); represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.2 Playing Back by Time

Purpose:

Play back video files recorded in specified time duration. Multi-channel simultaneous playback and channel switch are supported.

Steps:

1. Enter playback interface.
   Menu>Playback
2. Set search conditions and click the **Playback** button to enter Playback interface.

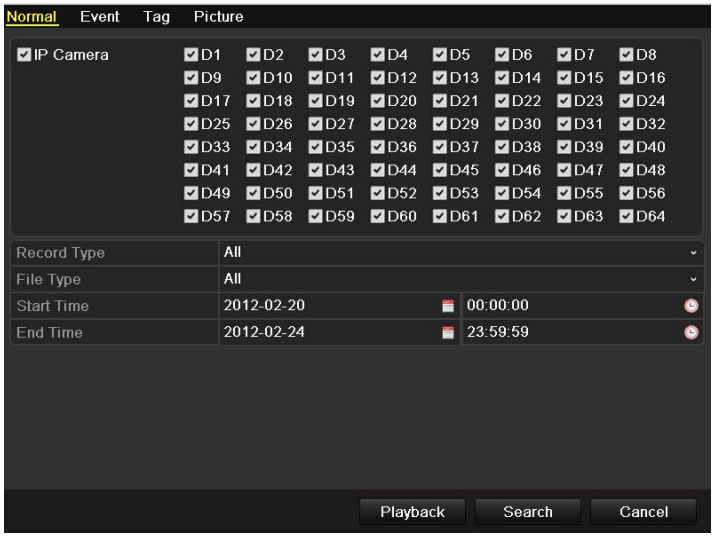


Figure 6.6 Video Search by Time

In the Playback interface:

The toolbar in the bottom part of Playback interface can be used to control playing process, as shown in Figure 6.7.

Figure 6.7 Interface of Playback by Time

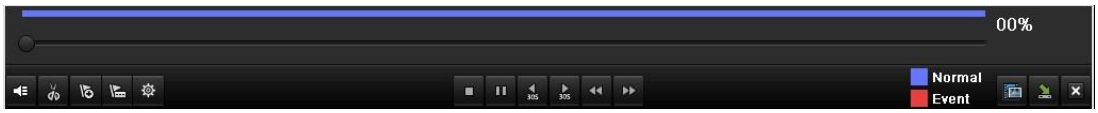


Figure 6.8 Toolbar of Playback by Time

Table 6.2 Detailed Explanation of Playback-by-time Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
/	Audio on/Mute	/	Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Stop playing	/	Pause play/Play/ Single-frame play		30s forward
	30s reverse		Speed down		Speed up		Video search
	Hide		Exit		Process bar		Video type bar

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: represents normal recording (manual or schedule); represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.3 Playing Back by Normal Video Search

Purpose:

Play back video files searched out by restricting recording type and recording time. The video files in the result list are played back sequentially and channel switch is supported. Recording types contain Normal, Motion, Alarm, Motion / Alarm, Motion & Alarm, Manual and All.

Steps:

1. Enter Record File Search interface.

   Menu>Playback

   Set search condition and click **Search** button to enter the Search Result interface.

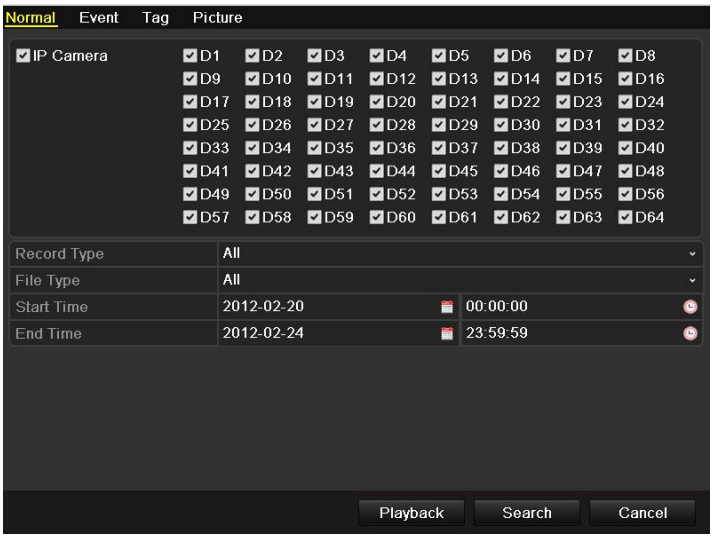


Figure 6.9 Normal Video Search

2. Choose a record file you want to play back.

If there is only one channel in the search result, click button to enter Full-screen Playback interface of this channel.

If more than one channel is optional, click button to enter step 3 and step 4.

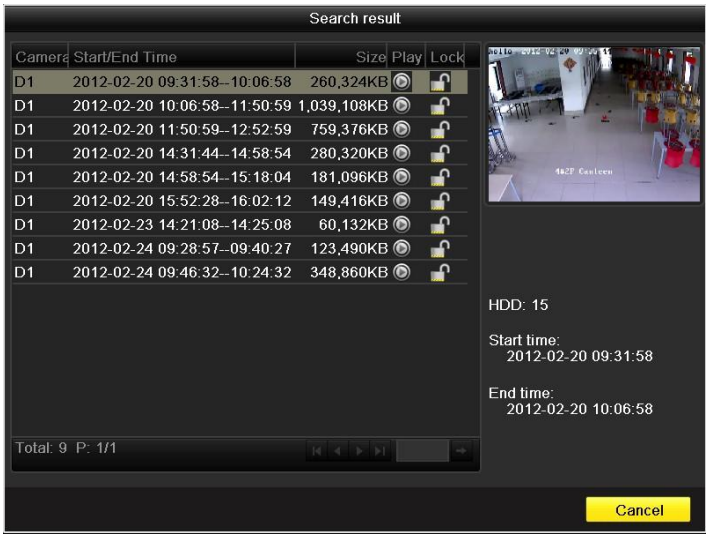


Figure 6.10 Result of Normal Video Search

3. Choose channels for simultaneous playback.

Note: Optional channels for simultaneous playback are the same as the channels chosen to search record files in step 1. And the channel with the recorded file selected in step 2 is the main channel during multi-channel playback and it is displayed at the upper left corner.

Note: Up to 4 channels can be selected for simultaneous playback. .

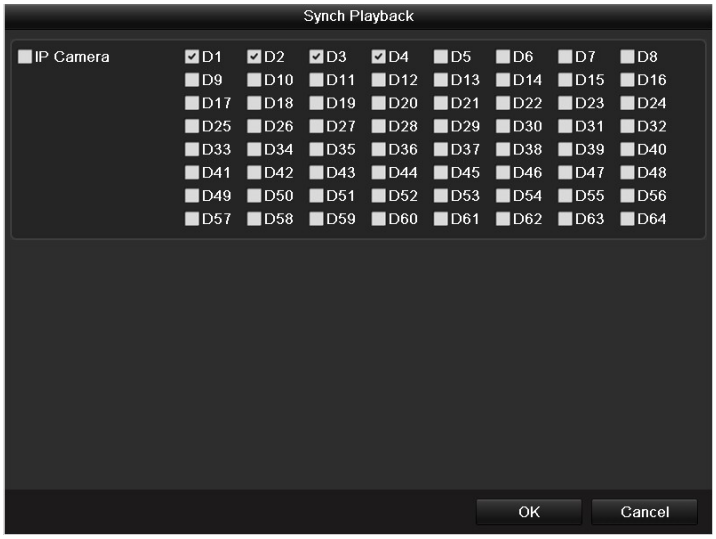


Figure 6.11 Select Channels for Synchronous Playback

4. Synchronous Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6.12 4-ch Synchronous Playback Interface

The hidden list of recorded files displays by moving the mouse to the right of the playback interface.

Figure 6.13 4-ch Synchronous Playback Interface with Video List

Figure 6.14 Toolbar of Normal Playback

Table 6.3 Detailed Explanation of Normal Playback Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
/	Audio on/Mute	/	Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Stop playing	/	Pause play/Play/ Single-frame play		30s forward
	30s reverse		Speed down		Speed up		Previous file
	Next file		Hide		Video search		Exit
	Process bar		Video type bar				

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: represents normal recording (manual or schedule); represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.4 Playing Back by Event Search

Purpose:

Play back record files on one or several channels searched out by restricting event type (e.g. alarm input and motion detection). Channel switch is supported.

Steps:

1. Enter the playback interface.
   Menu>Playback
2. Select Event tab to enter the Event Playback interface.

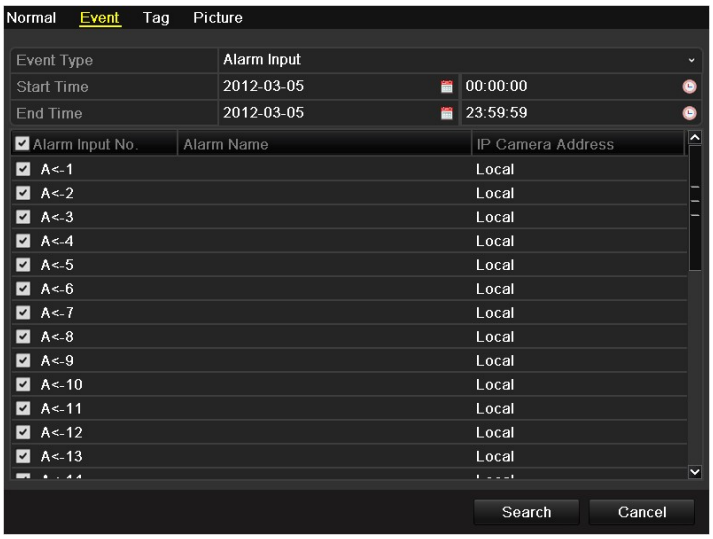


Figure 6.15 Video Search by Alarm Input

3. Select **Alarm Input** or **Motion** as the event type. The following steps are introduced for motion detection as the example.

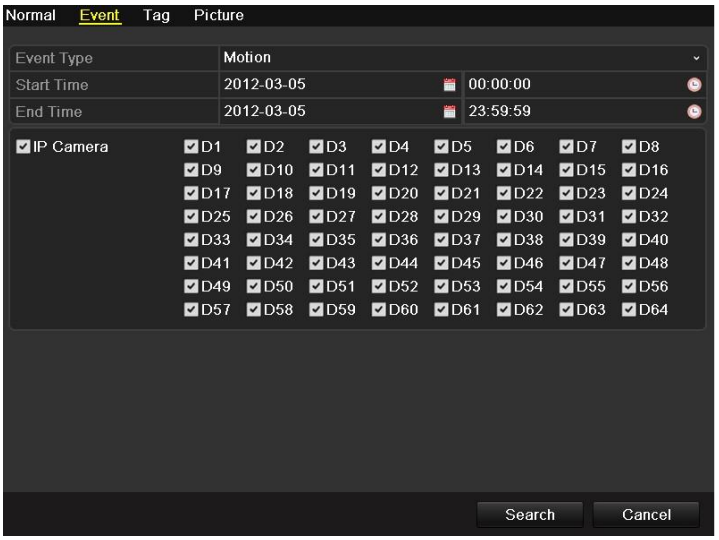


Figure 6.16 Video Search by Motion

4. Click **Search** button to enter the Search Result interface.
   The Pre-play and post-play can be configured. The **Pre-play** refers to the time configured before the defined start time of event search, and the **Post-play** refers to the time configured after the defined end time of event search. For example, when the start time and end time of event search are set to *12:00:00 - 13:00:00*, and the pre-play and post-play time is set to *30s* and *20s* respectively, then the actual playback of event video file is *11:59:30 ~ 13:00:20*.

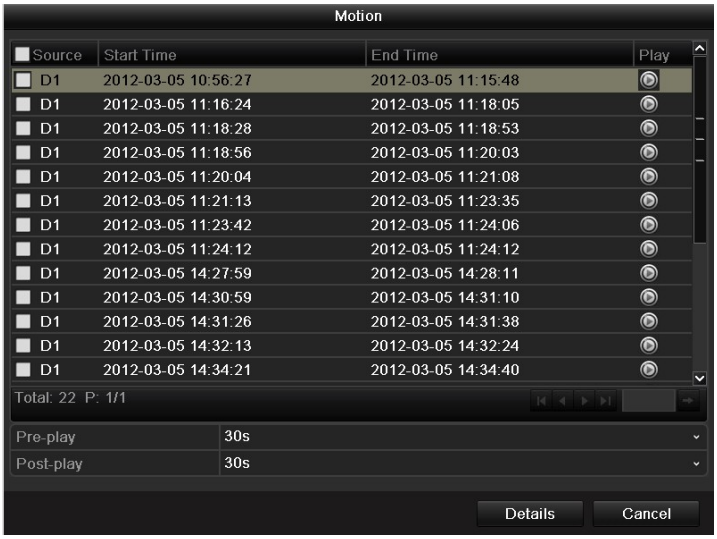


Figure 6.17 Search Results

5. You can click **Details** button to view detailed information of the record file, e.g. start time, end time, file size, etc.

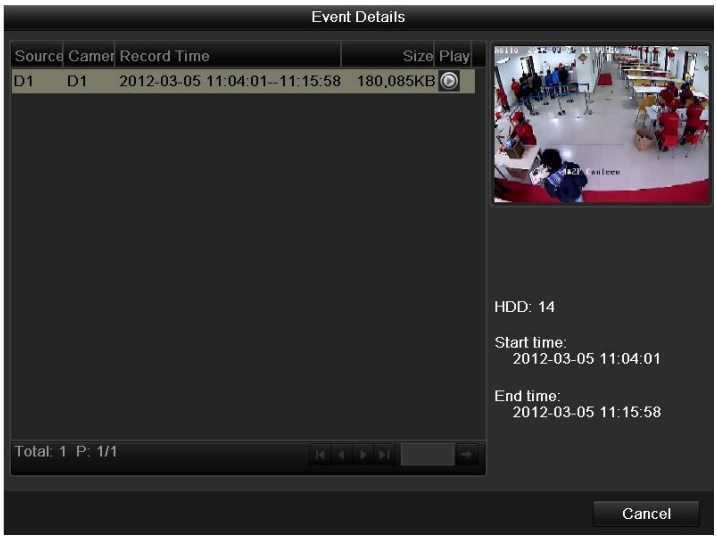


Figure 6.18 Event Details

6. Or you can directly click the button of each file item to enter its playback interface. The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6.19 Interface of Playback by Event

The hidden list of events will be displayed by moving the mouse to the right of the playback interface.

Figure 6.20 Playback Interface with Alarm Input List

Figure 6.21 Toolbar of Playback by Event

Table 6.4Detailed Explanation of Playback-by-event Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
/	Audio on/Mute	/	Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Stop playing	/	Pause play/Play/	30S	30s forward

					Single-frame play		
	30s reverse		Speed down		Speed up		Previous event
	Next event		Hide		Event search		Exit
	Process bar		Video type bar				

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: ■ represents normal recording (manual or schedule); ■ represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.5 Playing Back by Tag

Purpose:

Video tag allows you to record related information like people and location of a certain time point during playback. You are also allowed to use video tag(s) to search for record files and position time point.

Before playing back by tag:

1. Enter Playback interface.

Figure 6.22 Interface of Playback by Time

Press button to add default tag.

Press button to add customized tag and input tag name.

Note: Max. 64 tags can be added to a single video file.

2. Tag management.

Press button to check, edit and delete tag(s).

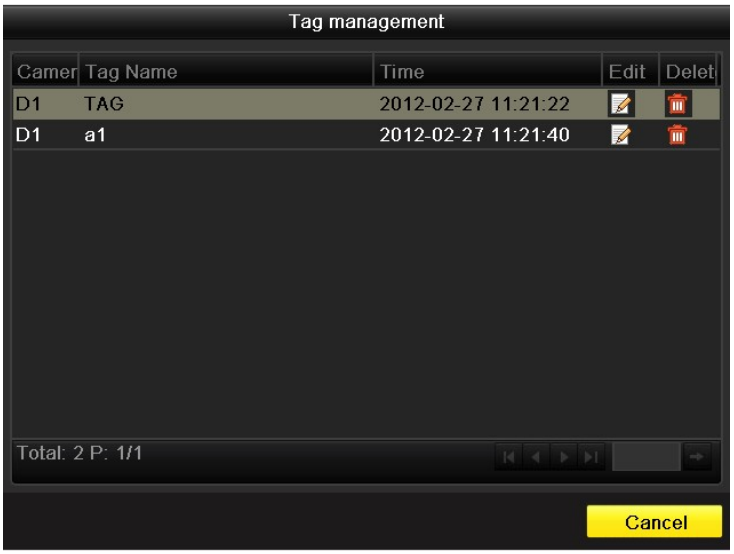


Figure 6.23 Tag Management Interface

Steps:

1. Enter Playback interface.

Menu>Playback

Press **Tag** tab to enter Playback by Tag interface.

Choose channels, tag type and time, and press Search to enter Search Result interface.

Note: Two tag types are selectable: *All* and *Tag Keyword*. Input keyword if you choose *Tag Keyword*.

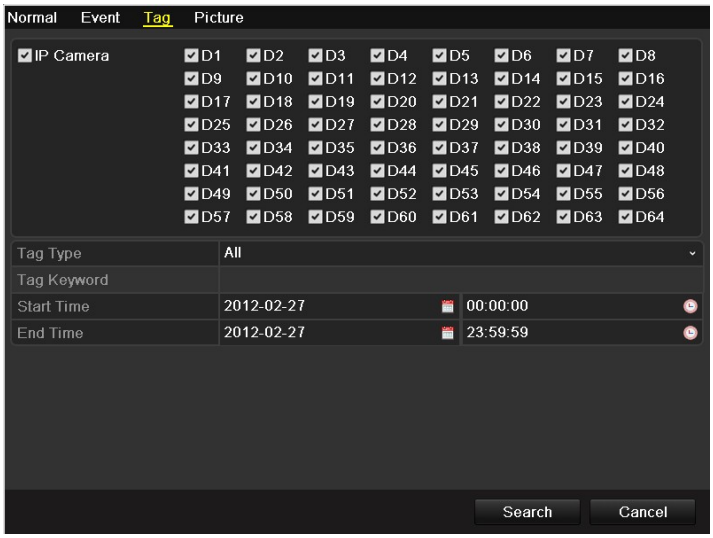


Figure 6.24 Video Search by Tag

2. Set playback conditions and tag management.

Choose the tag name of the recorded file you want to play back; it can be edited or deleted.

Pre-play and post-play time can be set according to actual needs.

Note: Pre-play time and post-play time is added to the time point of the tag.

Figure 6.25 Result of Video Search by Tag

3. Playback by tag.

Choose a tag and press button to play back the related record file.

Figure 6.26 Interface of Playback by Tag

The hidden list of tags will be displayed by moving the mouse to the right of the playback interface.

Figure 6.27 Interface of Playback by Tag with Video List

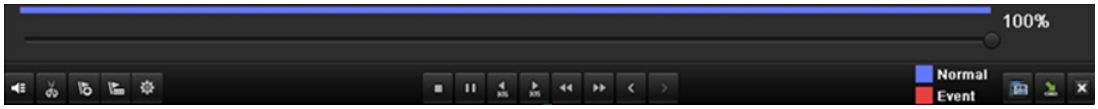


Figure 6.28 Toolbar of Playback by Tag

Table 6.5Detailed Explanation of Playback-by-tag Toolbar

Button	Operation	Button	Operation	Button	Operation	Button	Operation
/	Audio on/Mute	/	Start/Stop clipping		Add default tag		Add customized tag
	Tag management		Stop playing	/	Pause play/Play/Single-frame play		30s forward
	30s reverse		Speed down		Speed up		Previous tag
	Next tag		Tag search		Hide		Exit
	Process bar		Video type bar				

Note:

1. Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate special frames.
2. About video type bar: represents normal recording (manual or schedule); represents event recording (motion, alarm, motion | alarm, motion & alarm).

6.1.6 Playing Back by System Logs

Purpose:

Play back record file(s) associated with channels after searching system logs.

Steps:

1. Enter Log Search interface.

Menu>Maintenance>Log Search

Set search time and type and click **Search** button.

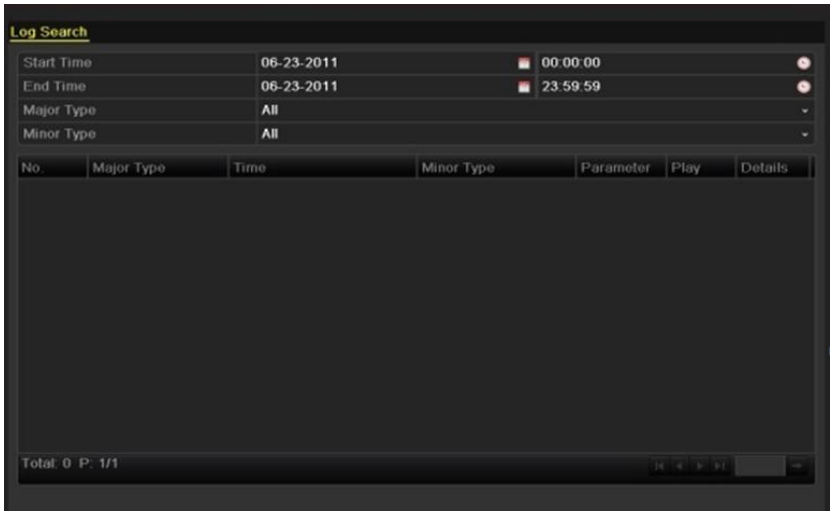


Figure 6.29 System Log Search Interface

2. Choose a log with record file and press button to enter Playback interface.

Note: If there is no record file at the time point of the log, the message box "no related record file" will pop up.

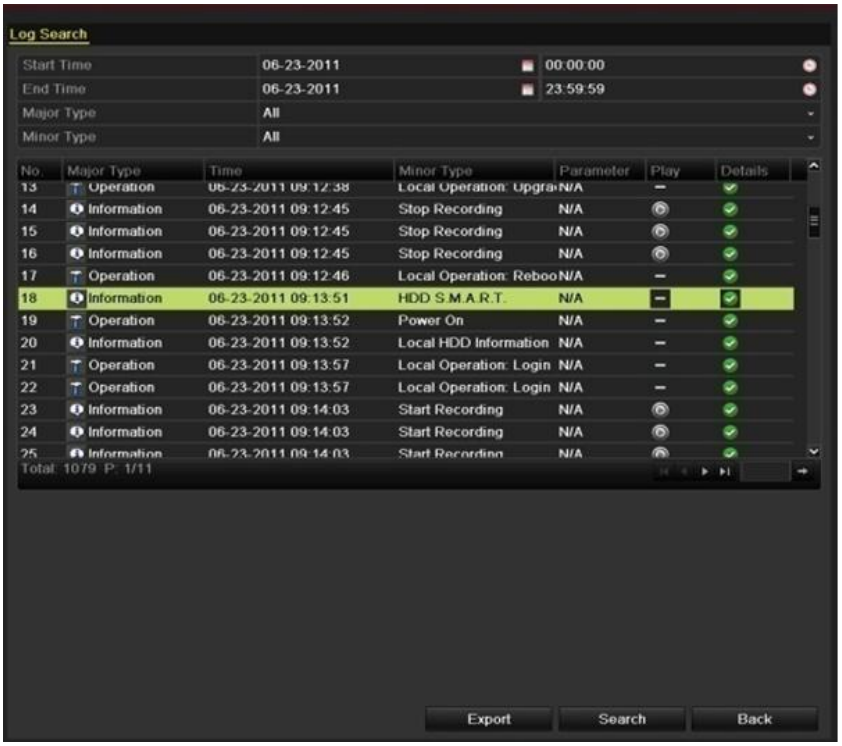


Figure 6.29 Result of System Log Search

3. Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6.30 Interface of Playback by Log

6.2 Auxiliary Functions of Playback

6.2.1 Playing Back Frame by Frame

Purpose:

Play video files frame by frame, in case of checking image details of the video when abnormal events happen.

Steps:

Go to Playback interface.

If you choose playback of the record file: click button until the speed changes to Single frame and one click on the playback screen represents playback of one frame.

6.2.2 Digital Zoom

Steps:

1. Enter the playback interface.
2. Right click on a channel under playback mode and choose **Digital Zoom** from the menu to enter Digital Zoom interface.
3. Drag the red rectangle on the video image within it will be quadrupled.

Figure 6.31 Draw Area for Digital Zoom

Figure 6.32 Right-click Menu under Playback

The right-click menu:

Note: This menu differs slightly from one playback interface to another.

Table 6.6 Detailed Explanation of Right-click Menu under Playback

Button	Function
	Return to Search interface
	Enter Digital Zoom interface
	Show & hide control interface
	Return to Playback interface

6.3 Picture Playback

Purpose:

Search and view captured pictures stored in HDD.

Steps:

1. Enter Playback interface.

   Menu>Playback

2. Choose **Picture** tab.

   Set channel, picture type and time and press **Search** button to enter Search Result interface.

   Note: Picture types include Normal, Motion, Alarm, Motion / Alarm, Motion & Alarm, Capture and Continuous Capture.

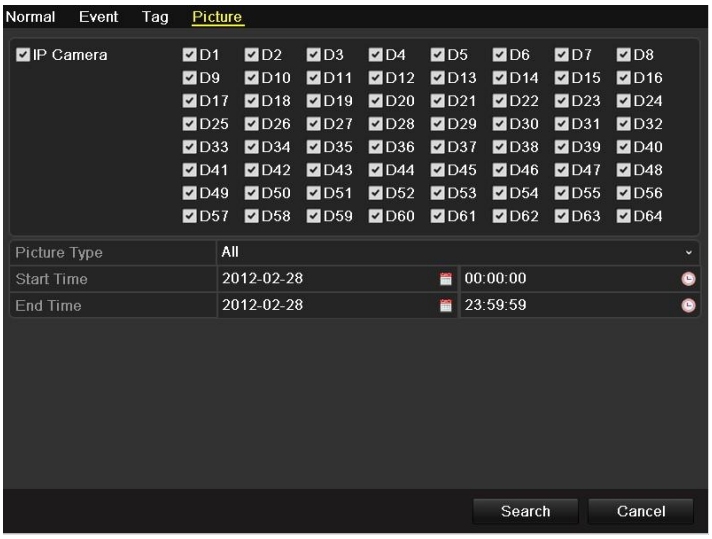


Figure 6.33 Picture Search

3. View pictures.

   Choose a picture you want to view and press button .

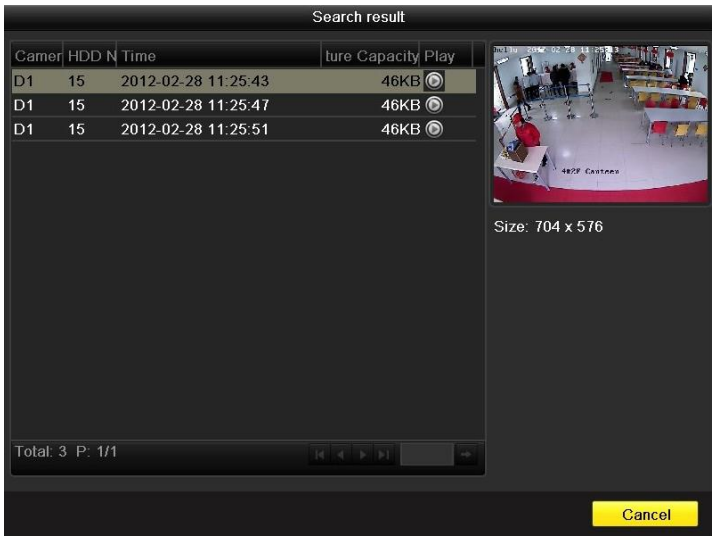


Figure 6.34 Result of Picture Search

4. Picture Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.

Figure 6.35 Picture Playback Interface

The hidden list of captured pictures will be displayed by moving the mouse to the right of the playback interface.

Figure 6.36 Playback Interface with Picture List

Figure 6.37 Picture Playback Toolbar

Table 6.7 Detailed Explanation of Picture-playback Toolbar

Button	Function	Button	Function	Button	Function	Button	Function
/	Play reverse/Pause	/	Play/Pause		Previous picture		Next picture
	Picture search		Hide		Exit		

C H A P T E R 7

Backup

7.1 Backing up Record Files

7.1.1 One-button Backup

You can press the button on the front panel to back up the recorded files. The device will automatically search the recorded files of all channels within recent 24 hours and export them to the available storage device. When the device is under fast backup, the ARCHIVE status LED indicator on the front panel flicks in green, and after the backup is finished, the indicator does not light.

Note: If the total size of the recorded files to be backed up exceeds the free space available by the storage device, the latest recorded files will have the priority to be backed up first.

7.1.2 Quick Export

Purpose:

Export record files to backup device(s) quickly.

Steps:

1. Enter Video Export interface.

   Menu>Export

2. Choose the channel (s) you want to back up and press **Quick Export** button.

   Notes:

   1. The time duration of record files on a specified channel cannot exceed one day. Otherwise, the message box "Max. 24 hours are allowed for quick export." will pop up.
   2. The number of channels for synchronous export cannot exceed 4. Otherwise, the message box "Max. 4 channels are allowed for synchronous quick export." will pop up.

Figure 7.1 Quick Export Interface

3. Export.

   Go to Export interface, choose backup device and press **Export** button to start exporting.

   Note: Here we use USB Flash Drive and please refer to the next section Normal Backup for more

backup devices supported by the device.

Figure 7.2 Quick Export using USB1-1

Stay in the Exporting interface until all record files are exported.

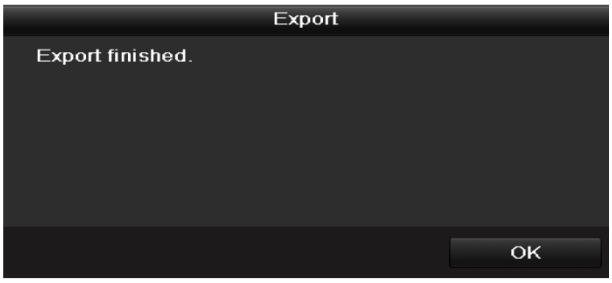


Figure 7.3 Export Finished

4. Check backup result.

Choose the record file in Export interface and press button to check it.

Note: The Player player.exe will be exported automatically during record file export.

Figure 7.4 Checkup of Quick Export Result Using USB1-1

7.1.3 Backing up by Normal Video Search

Purpose:

The record files can be backup to various devices, such as USB devices (USB flash drives, USB HDDs, USB writer), SATA writer and e-SATA HDD.

Backup using USB flash drives and USB HDDs

Steps:

1. Enter Export interface.

   Menu>Export>Normal

2. Set search condition and click **Search** button to enter the search result interface.

Figure 7.5 Normal Video Search for Backup

3. Select recorded files you want to back up.

   Click to play the recorded file if you want to check it.

   Check the checkbox before the recorded files you want to back up.

   Note: The size of the currently selected files is displayed in the lower-left corner of the window.

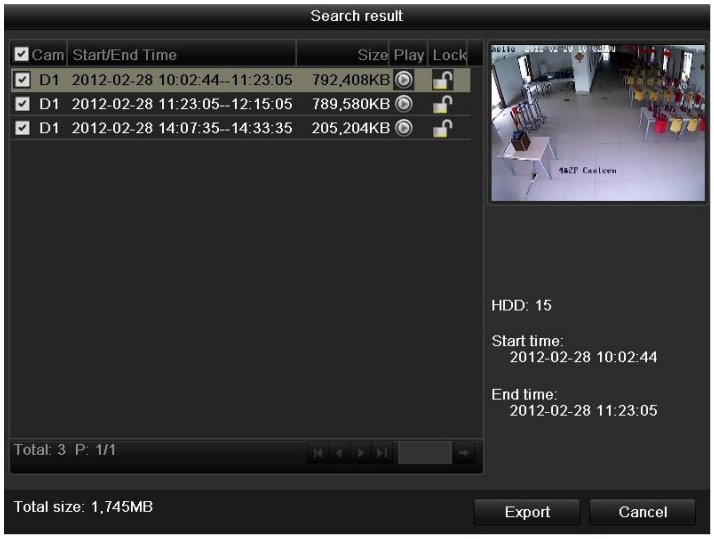


Figure 7.6 Result of Normal Video Search for Backup

4. Click **Export** button to enter the Export interface.
5. Click **Export** button to start exporting the selected recorded files to the inserted USB device. You can create new folder in the USB device or format the USB device before exporting if needed.

   Note: If the inserted USB device is not recognized:

   - Click the **Refresh** button.
   - Reconnect device.
   - Check for compatibility from vendor.

   You can also format USB flash drives or USB HDDs via the device.

Figure 7.7 Export by Normal Video Search using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message box “Export finished”.

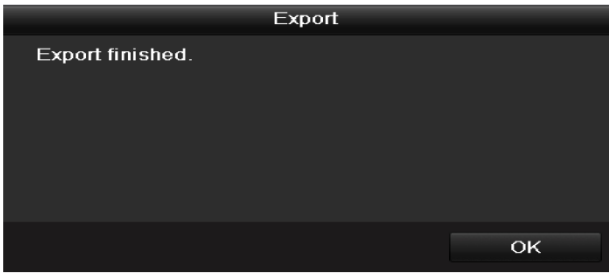


Figure 7.8 Export Finished

6. Check backup result.

Choose the record file in Export interface and press button to check it.

Note: The Player player.exe will be exported automatically during record file export.

Figure 7.9 Checkup of Export Result using USB Flash Drive

Backup using USB writer and SATA writer

Steps:

1. Enter Export interface.

   Menu>Export>Normal

2. Set search condition and press **Search** button to enter the search result interface.

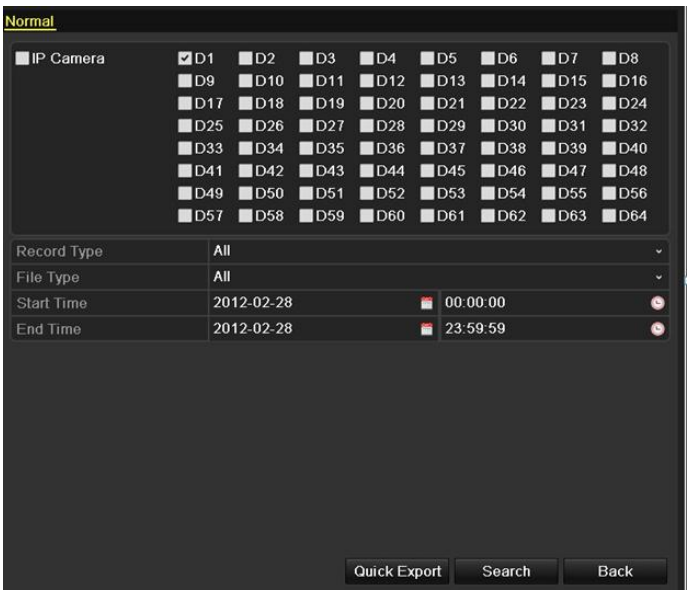


Figure 7.10 Normal Video Search for Backup

3. Select recorded files you want to back up.

Press button to play the recorded file if you want to check it.

Check the checkbox before the recorded files you want to back up.

Note: The size of the currently selected files is displayed in the lower-left corner of the window.

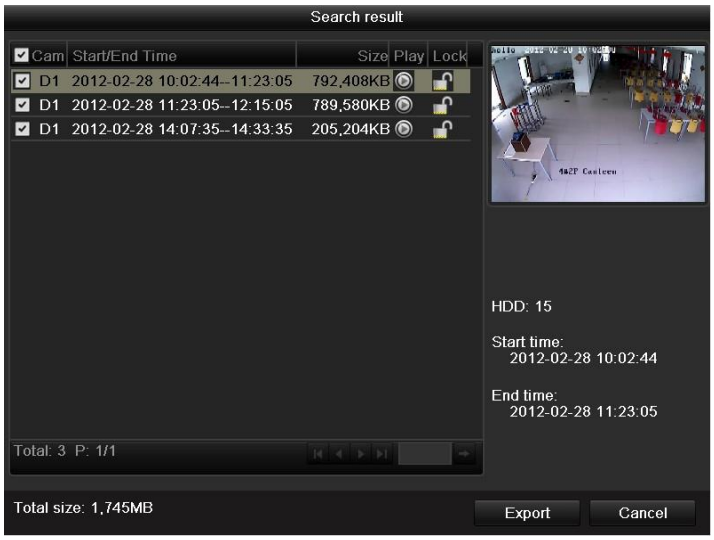


Figure 7.11 Result of Normal Video Search for Backup

4. Export.

Click **Export** button and start backup.

Note: If the inserted USB writer or SATA writer is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

Figure 7.12 Export by Normal Video Search using USB Writer

Stay in the Exporting interface until all record files are exported with pop-up message box "Export finished".

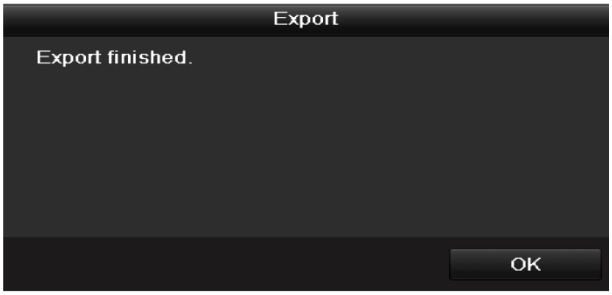


Figure 7.13 Export Finished

5. Check backup result.

Choose the record file in Export interface and press button to check it.

Note: The Player player.exe will be exported automatically during record file export.

Figure 7.14Checkup of Export Result using USB Writer

Backup using eSATA HDDs

Steps:

1. Enter Record>Advanced and set the working mode of eSATA HDD at “Export”.

   Menu>Record>Advanced

   Choose eSATA and set its mode at Export. Click **Yes** when pop-up message box “System will reboot automatically if the usage of eSATA is changed. Continue?”

   Note: The working modes of eSATA HDD contain Record/Capture and Export. And changes in working mode will take effective after rebooting the device.

2. Enter Export interface.

   Menu>Export>Normal

   Set search condition and press **Search** button to enter the search result interface.

Figure 7.15 Normal Video Search for Backup

3. Select record files you want to back up.

   Press button to play the record file if you want to check it.

   Tick record files you want to back up.

   Note: The size of the currently selected files is displayed in the lower-left corner of the window.

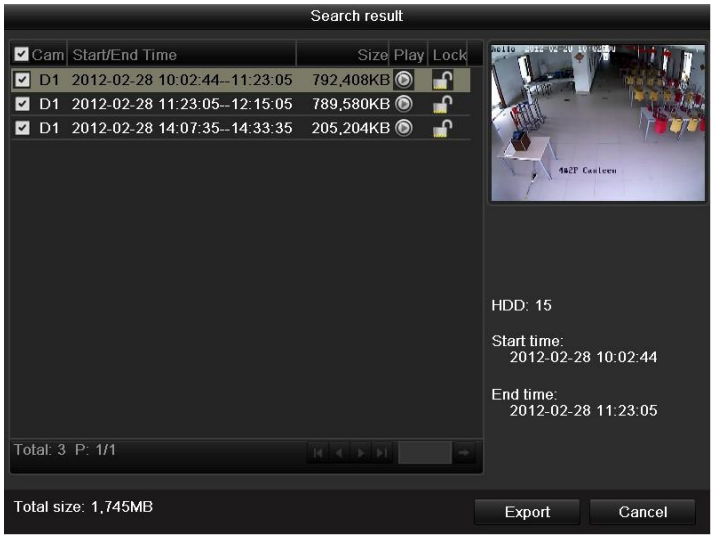


Figure 7.16 Result of Normal Video Search for Backup

4. Export.

Press **Export** button and start backup.

Note: Please format the eSATA first when using it for the first time. If the inserted eSATA HDD is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format SATA HDD via the device.

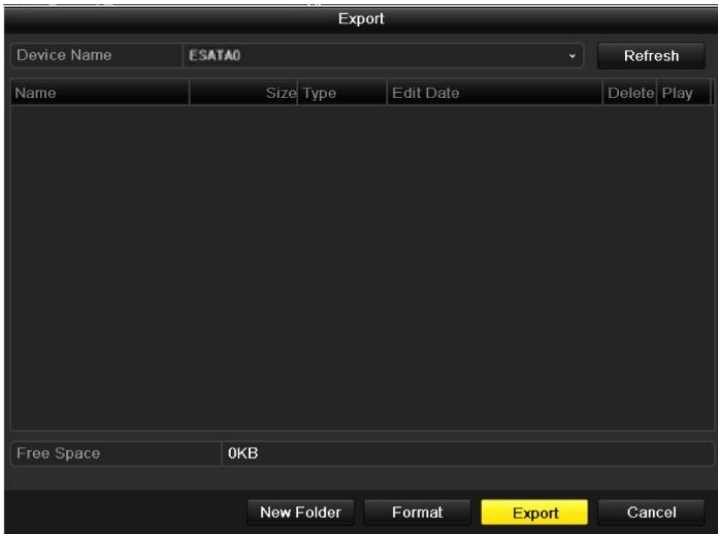


Figure 7.17 Export by Normal Video Search Using eSATA HDD

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

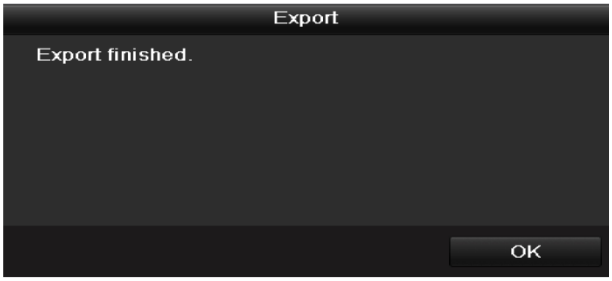


Figure 7.18 Export Finished

5. Check backup result.

Choose the record file in Export interface and press button to check it.

Note: The Player player.exe will be exported automatically during record file export.

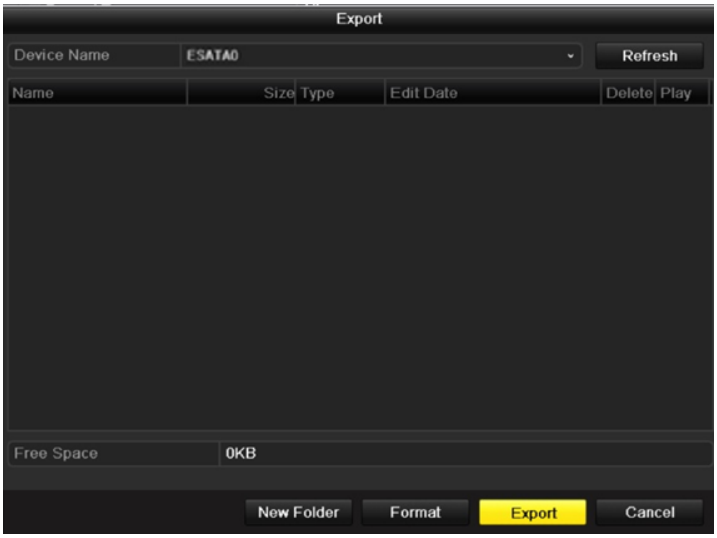


Figure 7.19 Checkup of Export Result Using eSATA HDD

7.1.4 Backing up by Event Search

Purpose:

Back up event-related record files using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or e-SATA HDD. Quick Backup and Normal Backup are supported.

Steps:

1. Enter Export interface.

   Menu>Export>Event

   1) Select “Alarm Input” from the dropdown list of Event Type.
   2) Select the alarm input No. and time.
   3) Press **Search** button to enter the Search Result interface.

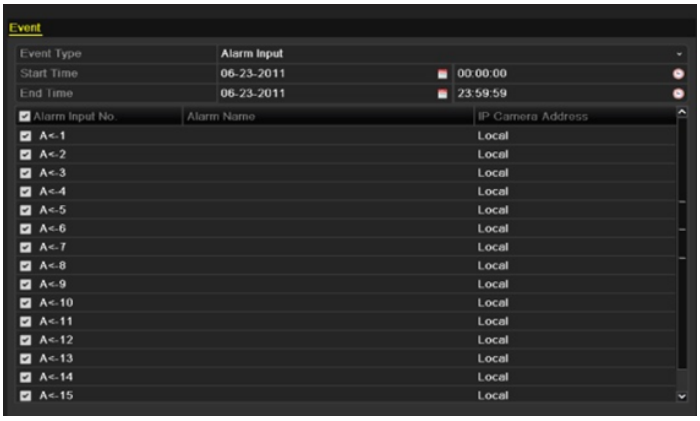


Figure 7.20 Event Search for Backup

2. Select recorded files to export.

1) Select an alarm input in the list and press **Quick Export** button to enter Export interface.

2) Pressing **Details** button will take you to the interface with detailed information of all channels triggered by the selected alarm input.

Note: Event types contain Alarm Input and Motion.

3) Pressing **Quick Export** button will export recorded files of all channels triggered by the selected alarm input.

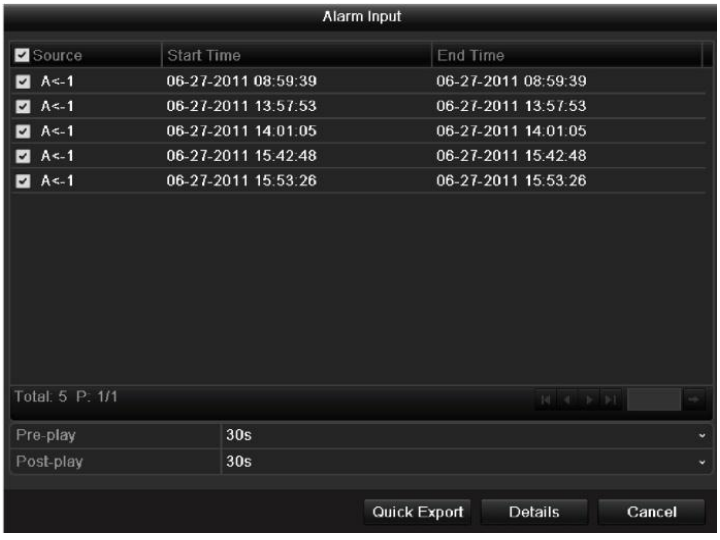


Figure 7.21 Result of Event Search

4) Click **Details** button to view detailed information of the record file, e.g. start time, end time, file size, etc.

Note: The size of the currently selected files is displayed in the lower-left corner of the window.

Figure 7.22 Event Details Interface

3. Export.

Click the **Export** button and start back up.

Note: If the inserted USB device is not recognized:

- Click the Refresh button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drive or USB HDDs via the device.

Figure 7.23 Export by Event Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

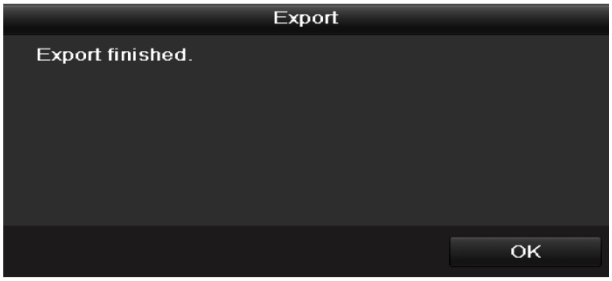


Figure 7.24 Export Finished

4. Check backup result.

   Note: The Player player.exe will be exported automatically during record file export.

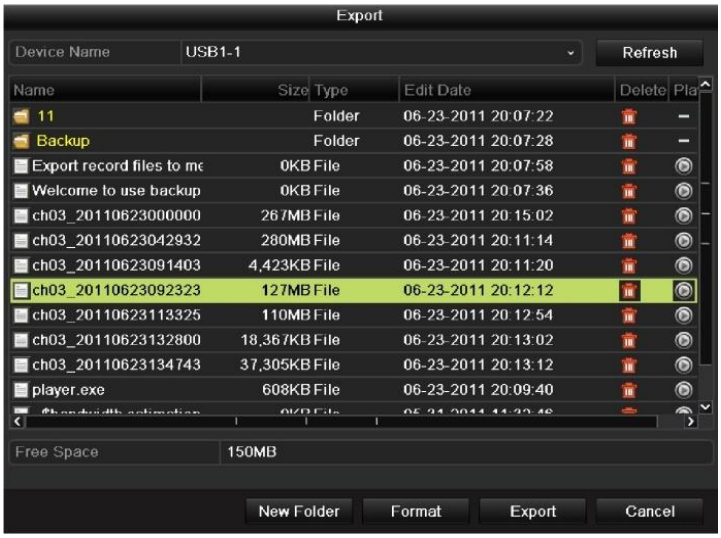


Figure 7.25 Checkup of Event Export Result Using USB Flash Drive

7.1.5 Backing up Video Clips

Purpose:

You may also select video clips to export directly during Playback, using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or e-SATA HDD.

Steps:

1. Enter Playback interface.

   Please refer to *Chapter 6*.

2. During playback, use buttons and in the playback toolbar to start or stop clipping record file(s).

3. Quit Playback interface after finishing clipping and you will then be prompted to save the clips.

   Note: A maximum of 30 clips can be selected for each channel.

Figure 7.26 Interface of Playback by Time

4. Click **Yes** to save video clips and enter Export interface, or click **No** to quit and do not save video clips.

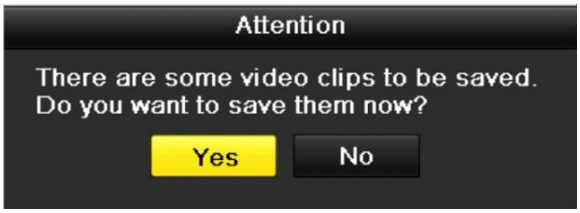


Figure 7.27 Attention to Video Clip Saving

5. Export.

   Press **Export** button and start backup.

   Note: If the inserted USB device is not recognized:

   - Click the **Refresh** button.
   - Reconnect device.
   - Check for compatibility from vendor.

   You can also format USB flash drive or USB HDDs via the device.

Figure 7.28 Export Video Clips Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message "Export finished".

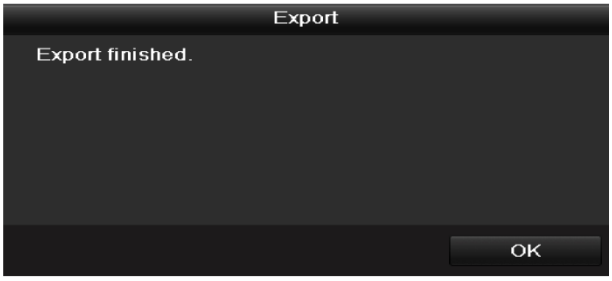


Figure 7.29 Export Finished

6. Check backup result.

Note: The Player player.exe will be exported automatically during record file export.

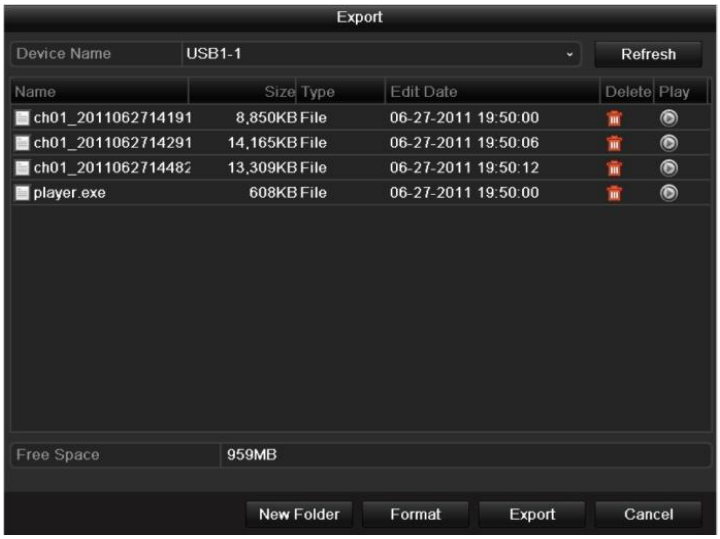


Figure 7.30 Checkup of Video Clips Export Result Using USB Flash Drive

7.2 Backing up Pictures

Purpose:

Back up pictures using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or e-SATA HDD.

Steps:

1. Enter Export interface.

Menu>Export>Picture

Select channel(s), image type, start time and end time, and click **Search** button to enter the Search Result interface.

Figure 7.31 Picture Search for Backup

2. Select pictures you want to back up.

Check the checkbox before the pictures you want to back up and click **Export** button.

Note: Here we take USB flash drive as an example. For more backup devices, please refer to section Playing Back by Normal Video Search.

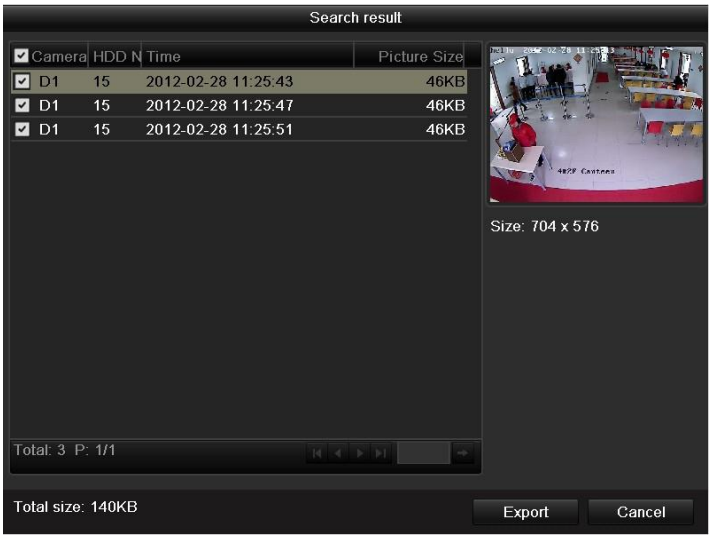


Figure 7.32 Result of Picture Search

3. Export.

Press **Export** button and start backup.

Figure 7.33 Export Pictures Using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message “Export finished”.

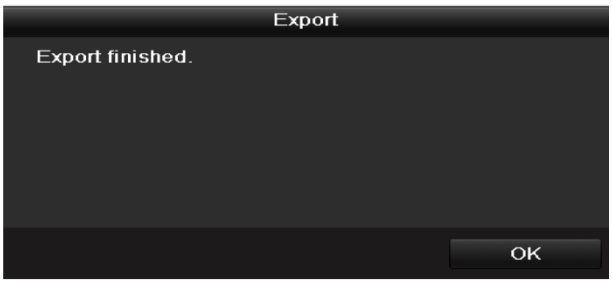


Figure 7.34 Export Finished

4. Check backup result.

Figure 7.35 Checkup of Picture Export Using USB Flash Drive

7.3 Managing Backup Devices

Management of USB flash drives, USB HDDs and eSATA HDDs.

1. Enter Search Result interface of record files.

   Menu>Export>Normal

   Set search condition and press **Search** button to enter Search Result interface.

   Note: At least one channel shall be selected.

Figure 7.36 Normal Video Search for Backup

2. Select record files you want to back up.

   Press **Export** button to enter Export interface.

   Note: At least one record file shall be selected.

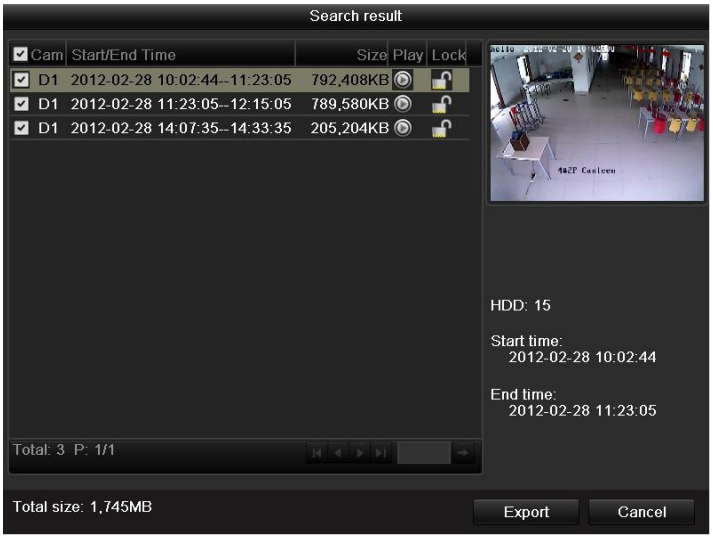


Figure 7.37 Result of Normal Video Search for Backup

3. Backup device management.

Press **New Folder** button if you want to create a new folder in the backup device.

Select a record file or folder in the backup device and press button if you want to delete it.

Select a record file in the backup device and press button to play it.

Press **Format** button to format the backup device.

Note: If the inserted USB device is not recognized:

- Click the **Refresh** button.
- Reconnect device.
- Check for compatibility from vendor.

Figure 7.38 USB Flash Drive Management

Management of USB writers and SATA writers

1. Enter Search Result interface of record files.

Menu>Export>Normal

Set search condition and press **Search** button to enter Search Result interface.

Note: At least one channel shall be selected.

Figure 7.39 Normal Video Search for Backup

2. Select record files you want to back up.

   Press **Export** button to enter Export interface.

   Note: At least one record file shall be selected.

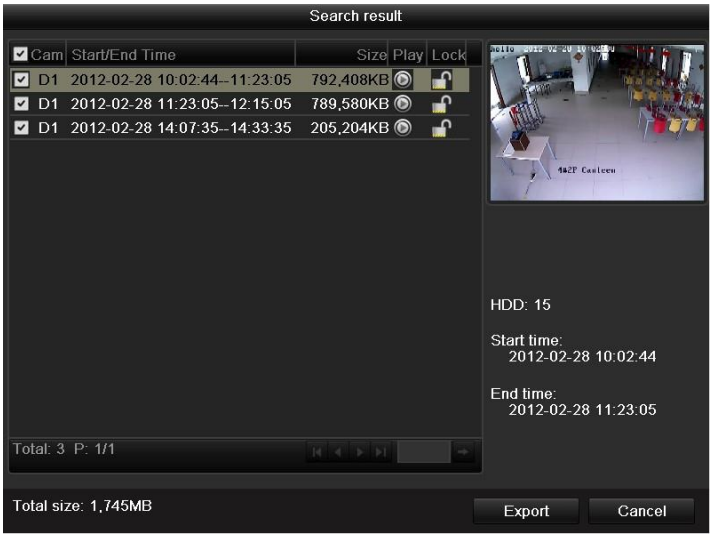


Figure 7.40 Result of Normal Video Search for Backup

3. Backup device management.

   Press **Erase** button if you want to erase the files from a re-writable CD/DVD.

   Note: There must be a re-writable CD/DVD when you make this operation.

   Note: If the inserted USB writer or SATA writer is not recognized:

   - Click the **Refresh** button.
   - Reconnect device.
   - Check for compatibility from vendor.

Figure 7.41 USB Writer Management

C H A P T E R 8

Alarm Settings

8.1 Setting up Motion Detection Alarm

Steps:

1. Enter Motion Detection interface of Camera Management and choose a camera you want to set up motion detection.

   Menu> Camera> Motion

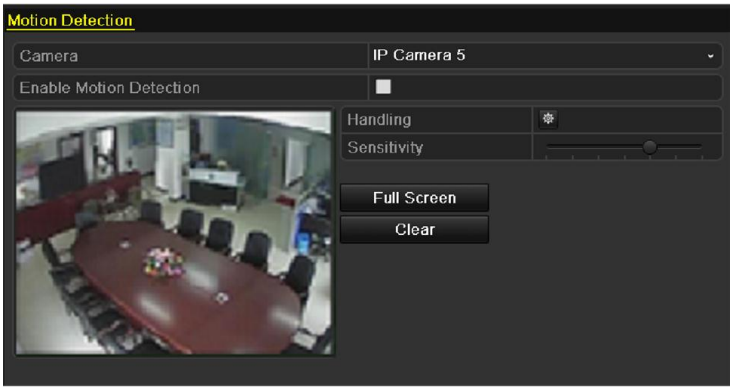


Figure 8.1Motion Detection Setup Interface

2. Check the checkbox of **Enable Motion Detection** to enable motion detection.
3. Drag and draw the area for motion detection by mouse. If you want to set the motion detection for all the area shot by the camera, click **Full Screen**. To clear the motion detection area, click **Clear**.
4. Drag the sensitivity sliding bar to set the sensitivity level.
5. Click the icon of **Handling** to enter the **Handling** interface.

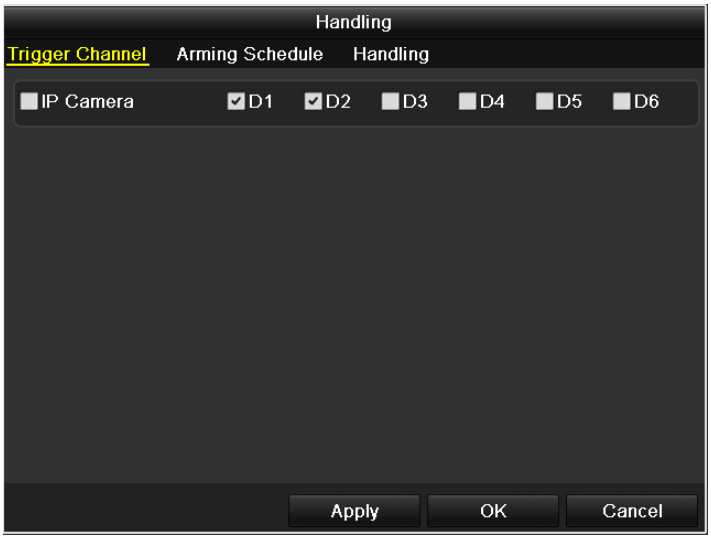


Figure 8.2 Set Trigger Camera of Motion Detection

6. Click **Trigger Channel** tab to select IP channel (s).
   1) Select one or more channels which will start to record/capture or become full-screen monitoring when motion alarm is triggered.
   2) Click **Apply** to save the settings.
7. Click **Arming Schedule** tab to set arming schedule of the channel.
   1) Select **Arming Schedule** tab to set the channel's arming schedule for the motion detection.

2) Choose one day of a week and up to eight time periods can be set within each day.

3) Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

4) Click **Apply** to save the settings.

Note: Time periods shall not be repeated or overlapped.

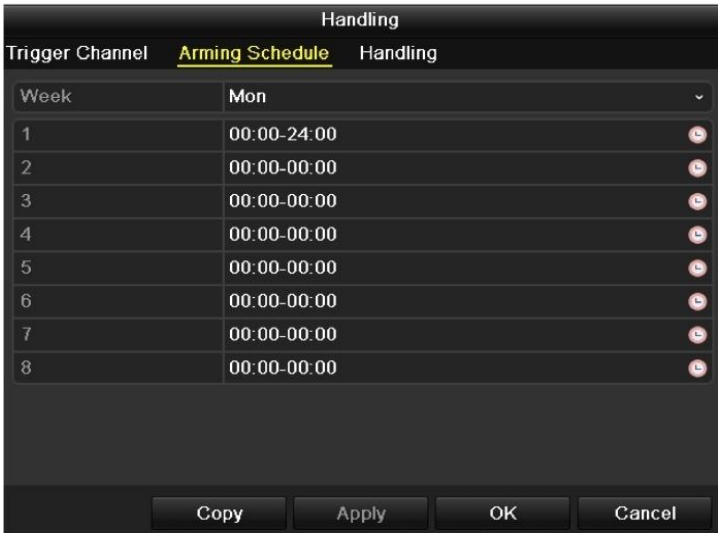


Figure 8.3 Set Arming Schedule of Motion Detection

8. Click **Handling** tab to set alarm response actions of motion alarm (please refer to *Chapter 8.6*). Click **Apply** to save the settings.

9. Click **OK** to back to the motion detection settings interface.

10. Click **Apply** to save the motion detection settings.

8.2 Setting up Sensor Alarms

Purpose:

Set up handling method of an external sensor alarm.

Steps:

1. Enter Alarm Settings of System Configuration.

   Menu> Configuration> Alarm

2. Select **Alarm Input** tab to enter Alarm Input Settings interface.

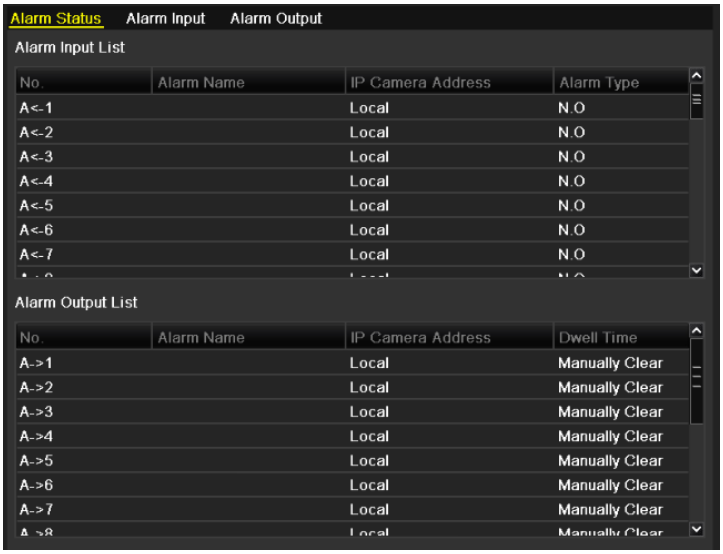


Figure 8.4 Alarm Status Interface of System Configuration

3. Check the **Setting** checkbox and click **Handling** button to set up its alarm response actions.

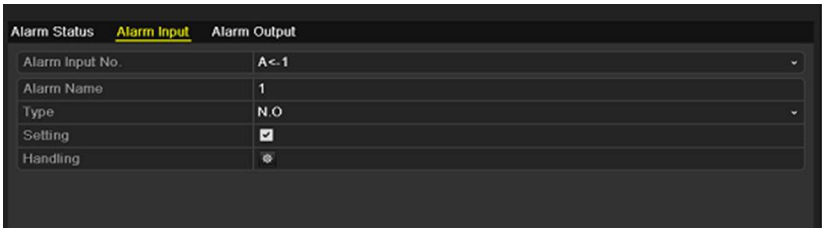


Figure 8.5 Alarm Input Setup Interface

4. Select **Trigger Channel** tab and select one or more channels which will start to record/capture or become full-screen monitoring when an external alarm is input.
5. Select **Arming Schedule** tab to set the channel's arming schedule.

   Choose one day of a week and up to 8 time periods can be set within each day.

   Note: Time periods shall not be repeated or overlapped.

   You can use **Copy** button to copy the same arming schedule to other days of a week.
6. Click the icon **of Handling** tab to set up alarm response actions of the alarm input (please refer to *Chapter 8.6*).

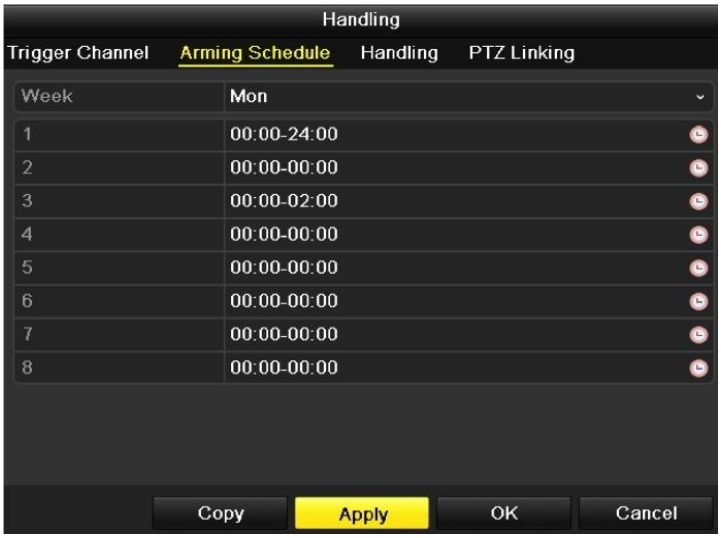


Figure 8.6 Set Arming Schedule of Alarm Input

7. If necessary, select PTZ Linking tab and set PTZ linkage of the alarm input.

Set PTZ linking parameters and press **Apply** and **OK** to complete the settings of the alarm input.

Note: Please check whether the PTZ or speed dome supports PTZ linkage.

One alarm input can trigger presets, patrol or pattern of more than one channel. But presets, patrols and patterns are exclusive.

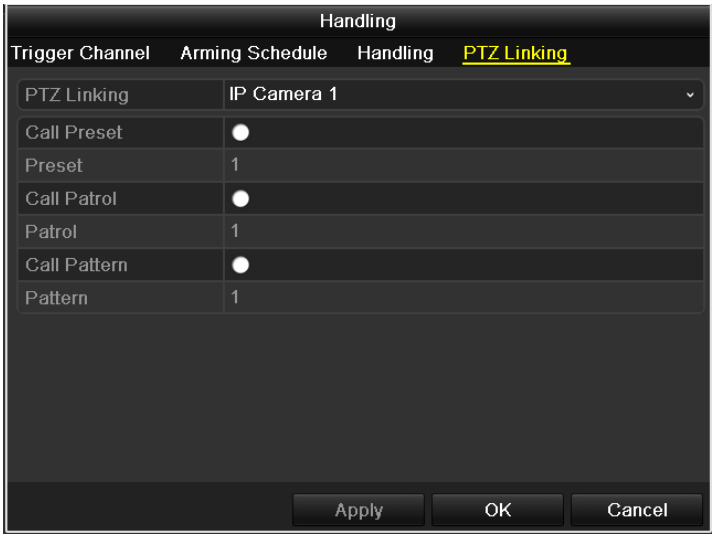


Figure 8.7 Set PTZ Linking of Alarm Input

8. If you want to set handling method of another alarm input, repeat the above steps or just copy the above settings to it.

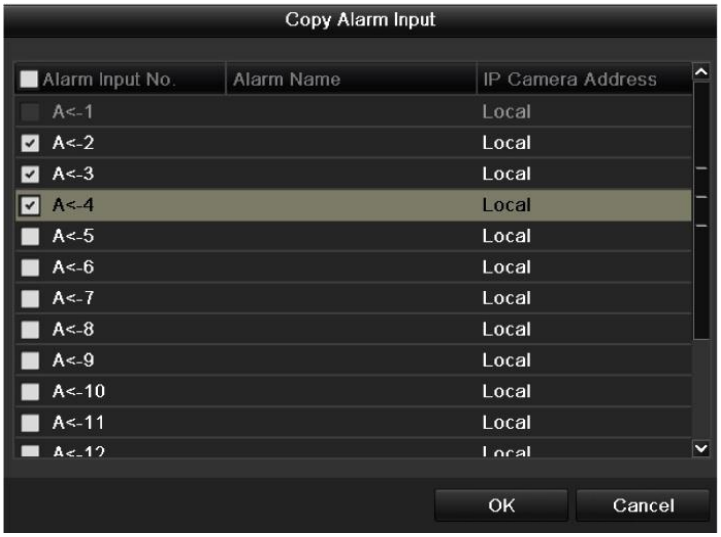


Figure 8.8 Copy Settings of Alarm Input

8.3 Detecting Video Loss Alarm

Purpose:

Detect video loss of a channel and take alarm response action(s).

Steps:

1. Enter Video Loss interface of Camera Management.

   Menu> Camera> Video Loss

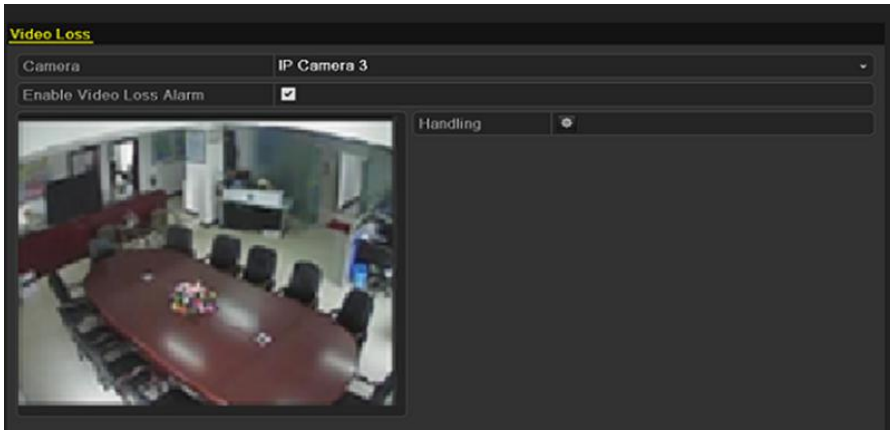


Figure 8.9 Video Loss Setup Interface

2. Select a channel you want to detect.
3. Check the checkbox of **Enable Video Loss Alarm**.
4. Click the icon of **Handling** to enter the Handling interface.
5. Set the arming schedule and alarm response actions. Please refer to **Step7** and **Step8** of *Chapter 8.1 Setting up Motion Detection Alarm.*

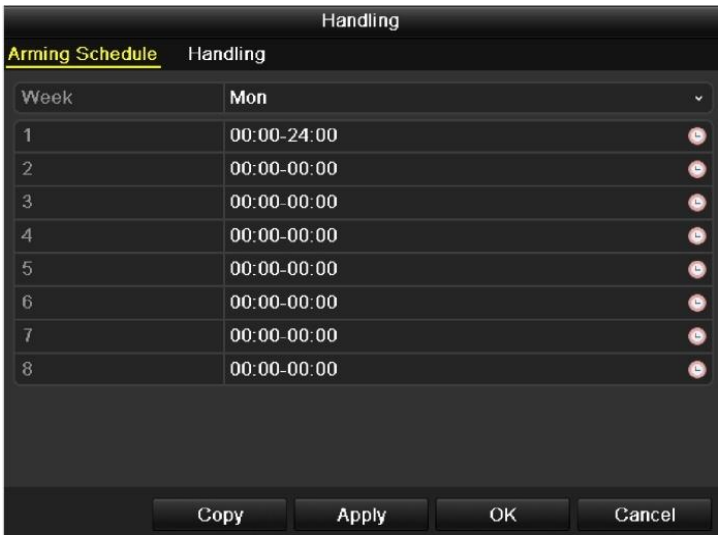


Figure 8.10 Set Arming Schedule of Video Loss

6. Click **Apply** to save the video loss alarm settings.

8.4 Detecting Video Tampering Alarm

Purpose:

Trigger alarm when the lens is covered and take alarm response action(s).

Steps:

1. Enter Video Tampering interface of Camera Management.

   Menu> Camera> Tamper-proof

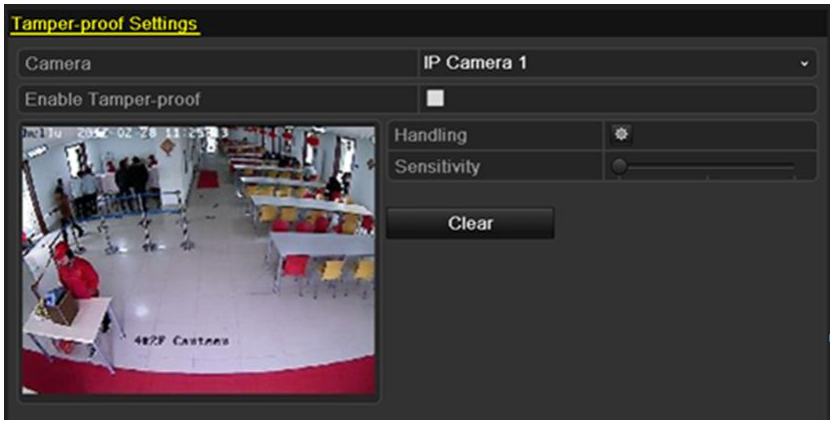


Figure 8.11 Tamper-proof Setup Interface

2. Select a channel you want to detect video tampering.
3. Check the checkbox of **Enable Tamper-proof.**
4. Use the mouse to draw an area on the preview screen which is set to detect video tampering.

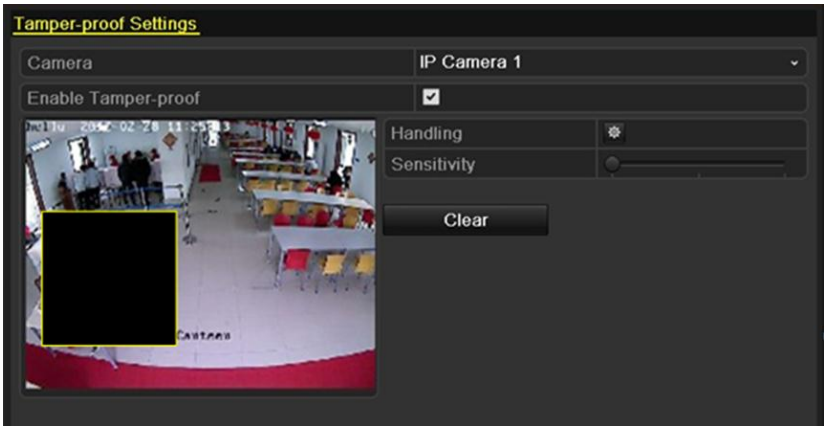


Figure 8.12 Set Detection Area and Sensitivity of Video Tampering

5. Move the sensitivity bar and choose a proper sensitivity level.
6. Click the icon of **Handling** to enter the Handling interface.
7. Set the arming schedule and alarm response actions. Please refer to **Step7** and **Step8** of *Chapter 8.1 Setting up Motion Detection Alarm.*

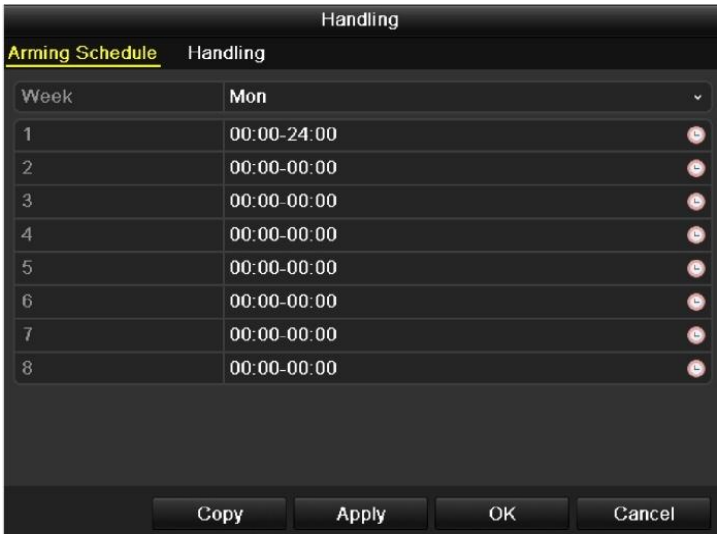


Figure 8.13 Set Arming Schedule of Video Tampering

8. Click **Apply** to save the video tampering settings of the channel.

8.5 Handling Exceptions Alarm

Purpose:

Exception settings refer to the handling method of various alarm exceptions, including:

- **HDD Full:** The HDD is full.
- **HDD Error:** Writing HDD error or unformatted HDD.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Duplicated IP address.
- **Illegal Login:** Incorrect user ID or password.
- **Record/Capture Exception:** No space for saving recorded files or captured images.
- **Array Exception:** Abnormal array status, e.g., array degraded, array offline, etc.

Note: When the RAID is enabled, the Array Exception type is selectable.

Steps:

Enter Exception interface of System Configuration and handle various exceptions.

Menu> Configuration> Exceptions

Please refer to *Chapter 8.6* for detailed alarm response actions.

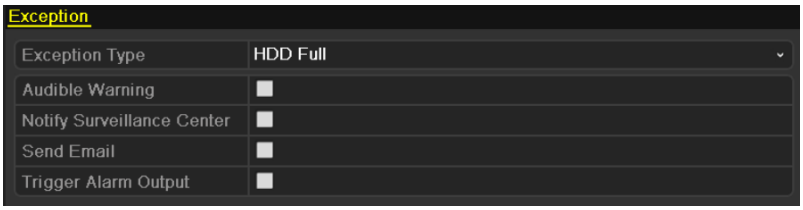


Figure 8.14 Exceptions Setup Interface

8.6 Setting Alarm Response Actions

Purpose:

Take alarm response actions will be activated when an alarm or exception occurs, including Full Screen Monitoring, Audible Warning (buzzer), Notify Surveillance Center, Upload Picture to FTP, Trigger Alarm Output and Send Email.

Full Screen Monitoring

When an alarm is triggered, the local monitor (VGA or BNC monitor) display in full screen the video image from the alarming channel configured for full screen monitoring.

If alarms are triggered simultaneously in several channels, their full-screen images will be switched at an interval of 10 seconds (default dwell time). A different dwell time can be set by going to Menu >Configuration>Live View>Alarm Picture Dwell Time.

Auto-switch will terminate once the alarm stops and you will be taken back to the Live View interface.

Note: You must select during "Trigger Channel" settings the channel(s) you want to make full screen monitoring.

Audible Warning

Trigger an audible *beep* when an alarm is detected.

Notify Surveillance Center

Sends an exception or alarm signal to remote alarm host when an event occurs. The alarm host refers to the PC installed with Remote Client.

Note: The alarm signal will be transmitted automatically at detection mode when remote alarm host is configured. Please refer to *Chapter 9.2.6* for details of alarm host configuration.

Email Linkage

Send an email with alarm information to a user or users when an alarm is detected.

Please refer to *Chapter 9.2.10* for details of Email configuration.

Trigger Alarm Output

Trigger an alarm output when an alarm is triggered.

1. Enter Alarm Output interface.

Menu> Configuration> Alarm> Alarm Output

Select an alarm output and set alarm name and dwell time. Press **Schedule** button to set the arming schedule of alarm output.

Note: If "Manually Clear" is selected in the drop-down list of Dwell Time, you can clear it only by going to Menu> Manual> Alarm.

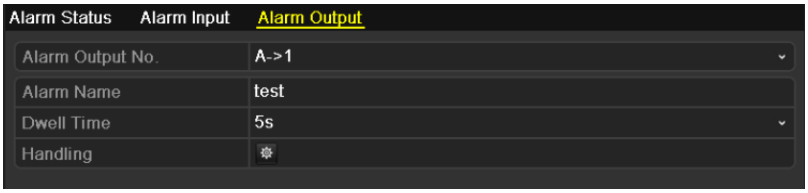


Figure 8.15Alarm Output Setup Interface

2. Set up arming schedule of the alarm output.

Choose one day of a week and up to 8 time periods can be set within each day.

Note: Time periods shall not be repeated or overlapped.

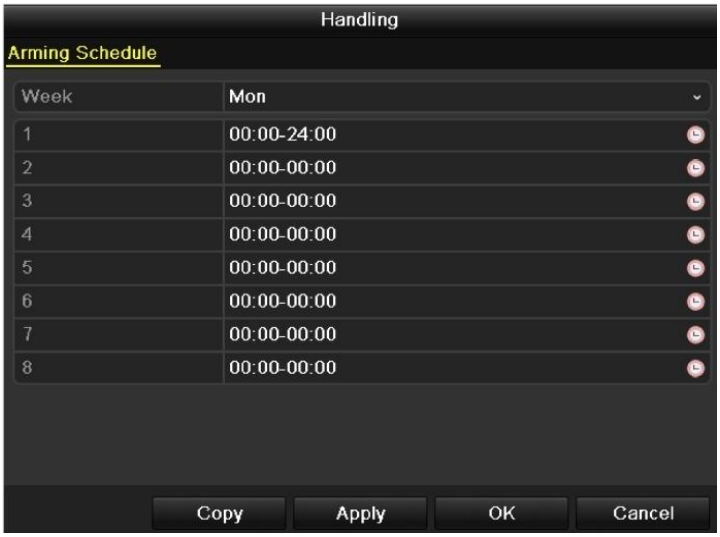


Figure 8.16 Set Arming Schedule of Alarm Output

3. Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

   Click the **OK** button to complete the video tampering settings of the alarm output No.

4. You can also copy the above settings to another channel.

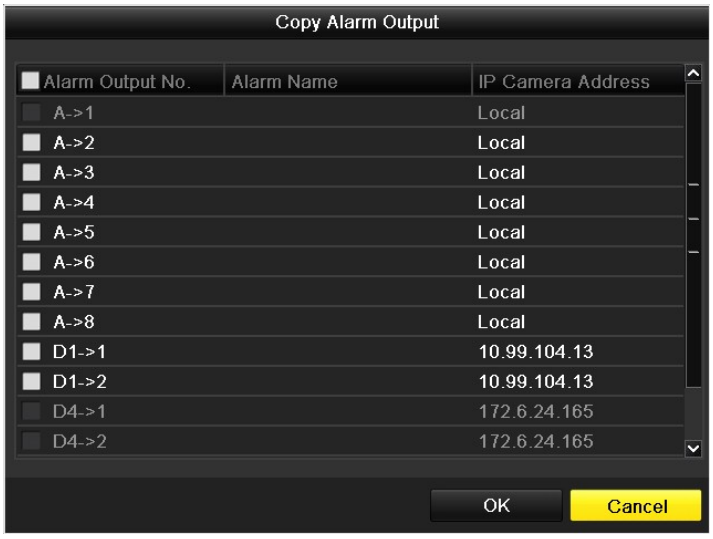


Figure 8.17 Copy Settings of Alarm Output

8.7 Triggering or Clearing Alarm Output Manually

Purpose:

Sensor alarm can be triggered or cleared manually. If "Manually Clear" is selected in the dropdown list of dwell time of an alarm output, the alarm can be cleared only by pressing **Clear** button in the following interface.

Steps:

Select the alarm output you want to trigger or clear and make related operations.

Menu> Manual> Alarm

Press **Trigger/Clear** button if you want to trigger or clear an alarm output.

Press **Trigger All** button if you want to trigger all alarm outputs.

Press **Clear All** button if you want to clear all alarm output.

Figure 8.18 Clear or Trigger Alarm Output Manually

C H A P T E R 9

Network Settings

9.1 Configuring General Settings

Purpose:

Network settings must be properly configured before you operate NVR over network.

Steps:

1. Enter the Network Settings interface.

   Menu >Configuration>Network

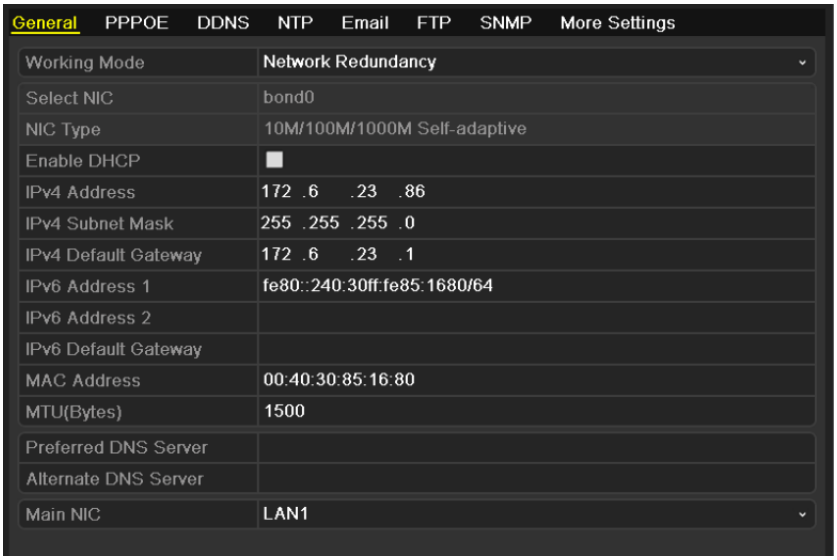


Figure 9.1 Network Settings Interface

2. Select the **General** tab.
3. Set the **Working Mode**.

There are two 10M/100M/1000M NIC cards provided by the device, and it allows the device to work in the Multi-address, Load Balance and Network Redundancy modes.

Multi-address Mode: The parameters of the two NIC cards can be configured independently. You can select LAN1 or LAN2 in the NIC type field for parameter settings.

You can select one NIC card as default route. And then the system is connecting with the extranet the data will be forwarded through the default route.

Network Redundancy Mode: The two NIC cards use the same IP address, and you can select the Main NIC to LAN1 or LAN2. By this way, in case of one NIC card failure, the device will automatically enable the other standby NIC card so as to ensure the normal running of the whole system.

Load Balance Mode: By using the same IP address and two NIC cards share the load of the total bandwidth, which enables the system to provide two Gigabit network capacity.

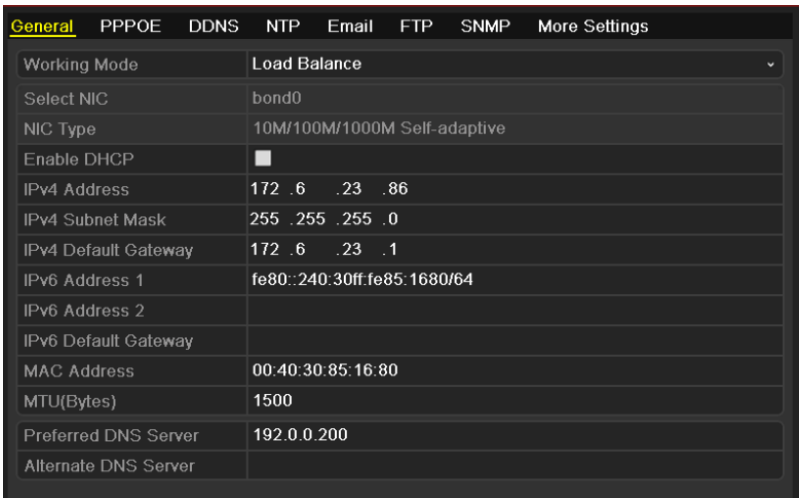


Figure 9.2 Load Balance Working Mode

4. Configure the other parameters: NIC Type, IPv4 Address, IPv4 Gateway, MTU and DNS Server. If the DHCP server is available, you can click the checkbox of **DHCP** to automatically obtain an IP address and other network settings from that server.

Note: The valid value range of MTU is 500 ~ 9676.

5. After having configured the general settings, click the **Apply** button to save the settings.

9.2 Configuring Advanced Settings

9.2.1 Configuring PPPoE Settings

Purpose:

Your NVR also allows access by Point-to-Point Protocol over Ethernet (PPPoE).

Steps:

1. Enter the **Network Settings** interface.

   Menu >Configuration> Network

2. Select the **PPPoE** tab to enter the PPPoE Settings interface, as shown in Figure9.3.

Figure 9.3 PPPoE Settings Interface

3. Check the **PPPoE** checkbox to enable this feature.
4. Enter **User Name**, **Password**, and **Confirm Password** for PPPoE access.

Note: The User Name and Password should be assigned by your ISP.

Figure 9.4 PPPoE Settings Interface

5. Click the **Apply** button to save and exit the interface.
6. After successful settings, the system asks you to reboot the device to enable the new settings, and the PPPoE dial-up is automatically connected after reboot.

   You can go to Menu >Maintenance>System Info >Network interface to view the status of PPPoE connection. Please refer to *Chapter 12.1Viewing System Information* for PPPoE status.

9.2.2 Configuring DDNS

Purpose:

If your NVR is set to use PPPoE as its default network connection, you may set Dynamic DNS (DDNS) to be used for network access.

Prior registration with your ISP is required before configuring the system to use DDNS.

Steps:

1. Enter the Network Settings interface.

   Menu >Configuration> Network
2. Select the **DDNS** tab to enter the DDNS Settings interface, as shown in Figure 9.5.

Figure 9.5 DDNS Settings Interface

3. Check the **DDNS** checkbox to enable this feature.
4. Select **DDNS Type**. Four different DDNS types are selectable: IPServer, DynDNS, PeanutHull, NO-IP and hkDDNS.
   - **IPServer:** Enter **Server Address** for IPServer.

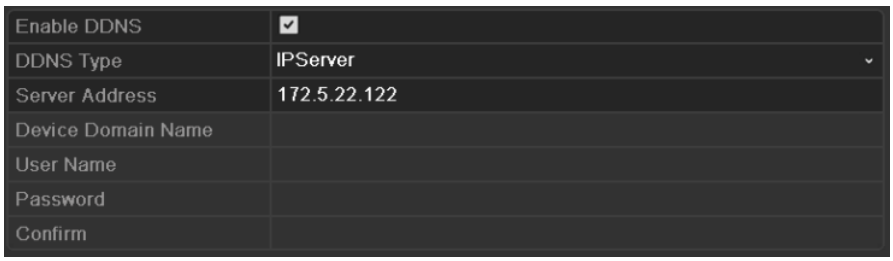


Figure 9.6 IP Server Settings Interface

   - **DynDNS:**

1) Enter **Server Address** for DynDNS (i.e. members.dyndns.org).
2) In the NVR Domain Name text field, enter the domain obtained from the DynDNS website.
3) Enter the **User Name** and **Password** registered in the DynDNS website.

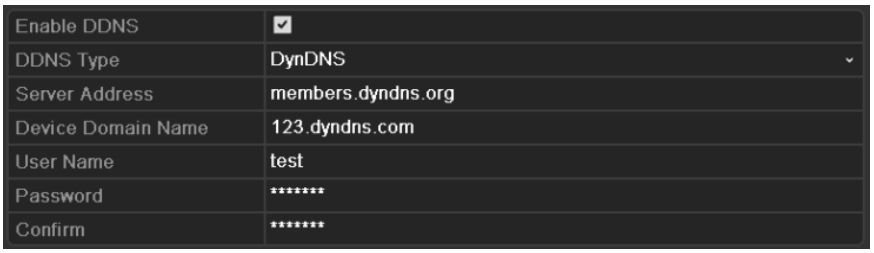


Figure 9.7 DynDNS Settings Interface

- **PeanutHull:** Enter User Name and Password obtained from the PeanutHull website.

Figure 9.8 PeanutHull Settings Interface

- **NO-IP:**

  Enter the account information in the corresponding fields. Refer to the DynDNS settings.

  1) Enter **Server Address** for NO-IP.
  2) In the NVR Domain Name text field, enter the domain obtained from the NO-IP website (www.no-ip.com).
  3) Enter the **User Name** and **Password** registered in the NO-IP website.

Figure 9.9 NO-IP Settings Interface

- **hkDDNS:** You need to enter the **Server Address** and **Device Domain Name** for hkDDNS, and other fields are read only.

  1) Enter the **Server Address** of the hkDDNS server: www.hik-online.com.
  2) Enter the **Device Domain Name.** You can register the alias of the device domain name in the hkDDNS server first and then enter the alias to the **Device Domain Name** in the DVR; you can also enter the domain name directly on the DVR to create a new one.

     Note: If a new alias of the device domain name is defined in the DVR, it will replace the old one registered on the server.

Figure 9.10 hkDDNS Settings Interface

Register the device on the hkDDNS server.

1) Go to the hkDDNS website: www.hik-online.com.
2) Click Register new user to register a user account.
3) After registration is successful, use the account and password to log in.

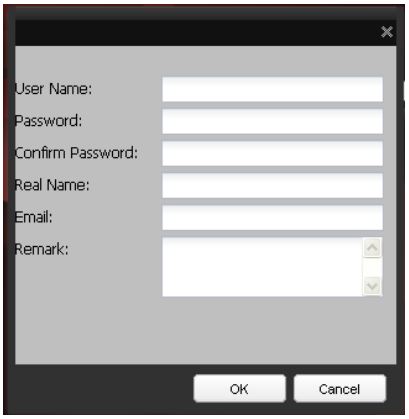


Figure 9.11 Register an Account

4) In the DDNS Management System interface, click the **Device Management** tab on the left menu bar and then click Add to register the device.

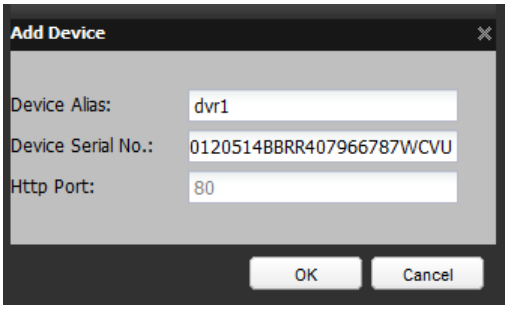


Figure 9.12 Register the Device

Note: Only lower-case English alphabet, numeric and '-' can be used in the alias of the device and the alias must be started with letters of the lower-case English alphabet.

5. Click the **Apply** button to save and exit the interface.

9.2.3 Configuring NTP Server

Purpose:

A Network Time Protocol (NTP) Server can be configured on your NVR to ensure the accuracy of system

date/time.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **NTP** tab to enter the NTP Settings interface, as shown in Figure 9.13.

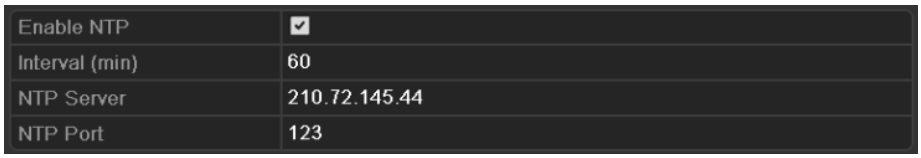


Figure 9.13 NTP Settings Interface

3. Check the **Enable NTP** checkbox to enable this feature.
4. Configure the following NTP settings:
   - **Interval:** Time interval between the two synchronizing actions with NTP server. The unit is minute.
   - **NTP Server:** IP address of NTP server.
   - **NTP Port:** Port of NTP server.
5. Click the **Apply** button to save and exit the interface.

Note: The time synchronization interval can be set from1 to 10080min, and the default value is 60min. If the NVR is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the NVR is setup in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

9.2.4 Configuring SNMP

Purpose:

You can use SNMP protocol to get device status and parameters related information.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **SNMP** tab to enter the SNMP Settings interface, as shown in Figure 9.14.

Figure 9.14 SNMP Settings Interface

3. Check the **SNMP** checkbox to enable this feature.
4. Configure the SNMP settings.

Figure 9.15 Configure SNMP Settings

5. Click the **Apply** button to save and exit the interface.

Note: Before setting the SNMP, please download the SNMP software and manage to receive the device information via SNMP port. By setting the Trap Address, the NVR is allowed to send the alarm event and exception message to the surveillance center.

9.2.5 Configuring Remote Alarm Host

Purpose:

With a remote alarm host configured, the NVR will send the alarm event or exception message to the host when an alarm is triggered. The remote alarm host must have the Network Video Surveillance software installed.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 9.16.

Figure 9.16 More Settings Interface

3. Enter **Alarm Host IP** and **Alarm Host Port** in the text fields.
   The **Alarm Host IP** refers to the IP address of the remote PC on which the Network Video Surveillance Software (e.g., iVMS-4200) is installed, and the **Alarm Host Port** must be the same as the alarm monitoring port configured in the software.

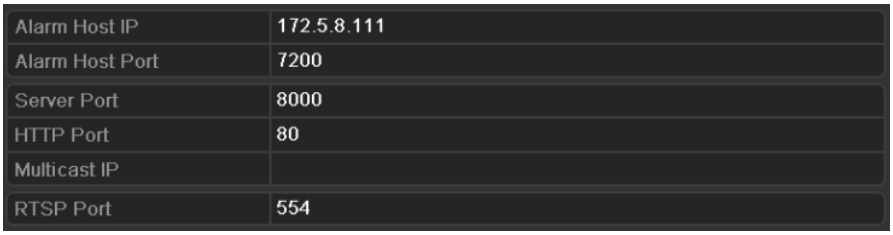


Figure 9.17 Configure Alarm Host

4. Click the **Apply** button to save and exit the interface.

9.2.6 Configuring Multicast

Purpose:

The multicast can be configured to realize live view for more than 128 cameras through network.

A multicast address spans the Class-D IP range of 224.0.0.0 to 239.255.255.255. It is recommended to use the IP address ranging from 239.252.0.0 to 239.255.255.255.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 9.18.
3. Set **Multicast IP**, as shown in Figure 9.18. When adding a device to the Network Video Surveillance Software, the multicast address must be the same as the NVR's multicast IP.

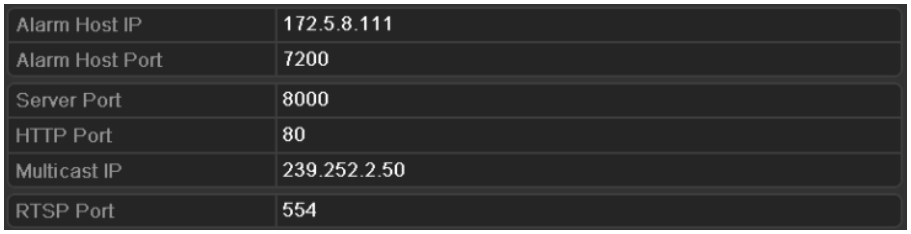


Figure 9.18 Configure Multicast

4. Click the **Apply** button to save and exit the interface.

Note: The multicast function should be supported by the network switch to which the NVR is connected.

9.2.7 Configuring RTSP

Purpose:

The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.

Steps:

1. Enter the Network Settings menu by clicking Menu >Configuration> Network.
2. Select the **More Settings** tab to enter the More Settings menu, as shown in Figure 9.19.

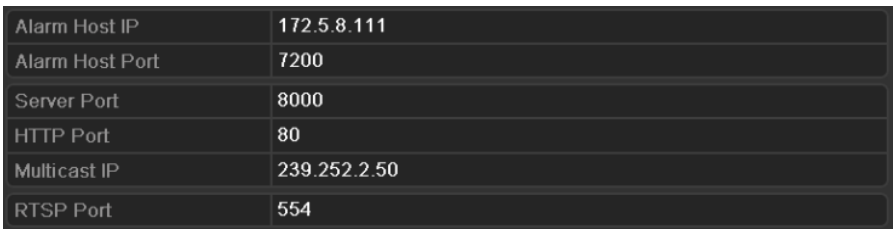


Figure 9.19 RTSP Settings Interface

3. Enter the RTSP port in the text field of **RTSP Service Port**. The default RTSP port is 554, and you can change it according to different requirements.
4. Click the **Apply** button to save and exit the menu.

9.2.8 Configuring Server and HTTP Ports

Purpose:

You can change the server and HTTP ports in the Network Settings menu. The default server port is 8000 and the default HTTP port is80.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Select the **More Settings** tab to enter the More Settings interface, as shown in Figure 9.20.
3. Enter new **Server Port** and **HTTP Port**, as shown in Figure 9.20.

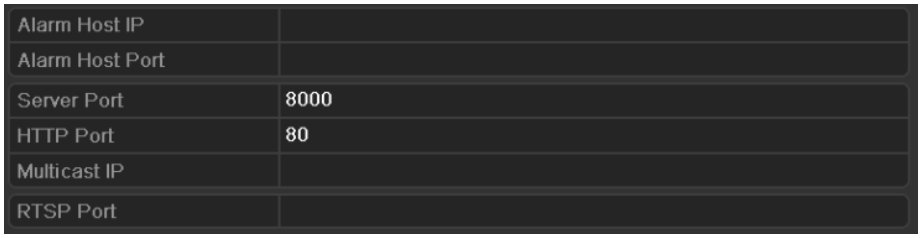


Figure 9.20 Host/Others Settings Menu

4. Enter the Server Port and HTTP Port in the text fields. The default Server Port is 8000 and the HTTP Port is 80, and you can change them according to different requirements.
5. Click the **Apply** button to save and exit the interface.

Note: The Server Port should be set to the range of 2000-65535 and it is used for remote client software access. The HTTP port is used for remote IE access.

9.2.9 Configuring Email

Purpose:

The system can be configured to send an Email notification to all designated users if an alarm event is detected, etc., an alarm or motion event is detected or the administrator password is changed.

Before you start:

Before configuring the Email settings, the NVR must be connected to a local area network (LAN) that maintains an SMTP mail server. The network must also be connected to either an intranet or the Internet depending on the location of the e-mail accounts to which you want to send notification.

Steps:

1. Enter the Network Settings interface.
   Menu >Configuration> Network
2. Set the IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway and the Preferred DNS Server in the Network Settings menu, as shown in Figure 9.21.

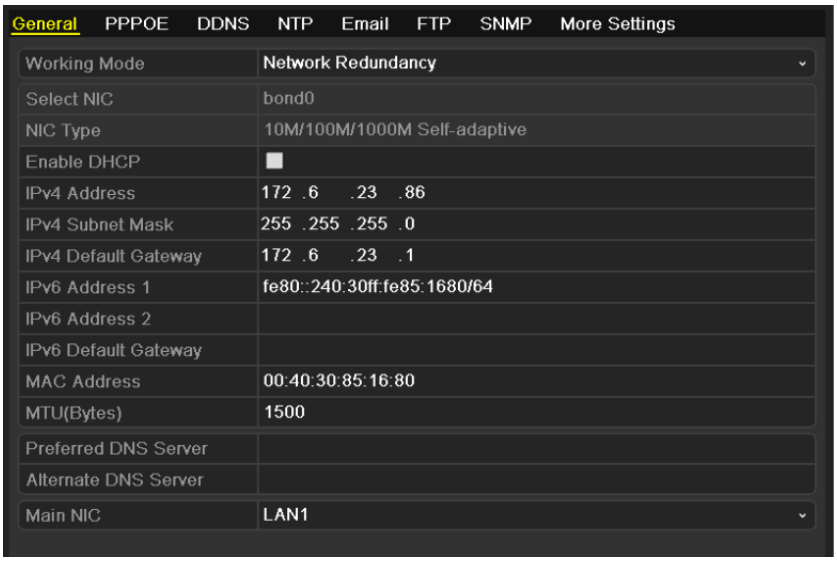


Figure 9.21 Network Settings Interface

3. Click the **Apply** button to save the settings.
4. Select the **Email** tab to enter the Email Settings interface.

Figure 9.22 Email Settings Interface

5. Configure the following Email settings:

   Enable Server Authentication (optional): Check the checkbox to enable the server authentication feature.

   User Name: The user account of sender's Email for SMTP server authentication.

   Password: The password of sender's Email for SMTP server authentication.

   SMTP Server: The SMTP Server IP address or host name (e.g., smtp.263xmail.com).

   SMTP Port No.: The SMTP port. The default TCP/IP port used for SMTP is 25.

   Enable SSL (optional): Click the checkbox to enable SSL if required by the SMTP server.

   Sender: The name of sender.

   Sender's Address: The Email address of sender.

   Select Receivers: Select the receiver. Up to 3 receivers can be configured.

   Receiver: The name of user to be notified.

Receiver's Address: The Email address of user to be notified.

Enable Attached Pictures: Check the checkbox of **Enable Attached Picture** if you want to send email with attached alarm images. The interval is the time of two adjacent alarm images. You can also set SMTP port and enable SSL here.

Interval: The interval refers to the time between two actions of sending attached pictures.

E-mail Test: Sends a test message to verify that the SMTP server can be reached.

6. Click the **Apply** button to save the Email settings.
7. You can click the **Test** button to test whether your Email settings work. The corresponding Attention message box will pop up. Refer to Figure 9.23.

Figure 9.23 Email Testing Attention

9.3 Checking Network Traffic

Purpose:

You can check the network traffic to obtain real-time information of NVR such as linking status, MTU, sending/receiving rate, etc.

Steps:

1. Enter the Network Traffic interface.

   Menu >Maintenance>Net Detect

Figure 9.24 Network Traffic Interface

2. You can view the sending rate and receiving rate information on the interface. The traffic data is refreshed every 1 second.

9.4 Configuring Network Detection

Purpose:

You can obtain network connecting status of NVR through the network detection function, including network delay, packet loss, etc.

9.4.1 Testing Network Delay and Packet Loss

Steps:

1. Enter the Network Traffic interface.
   Menu >Maintenance>Net Detect
2. Click the **Network Detection** tab to enter the Network Detection menu, as shown in Figure 9.25.

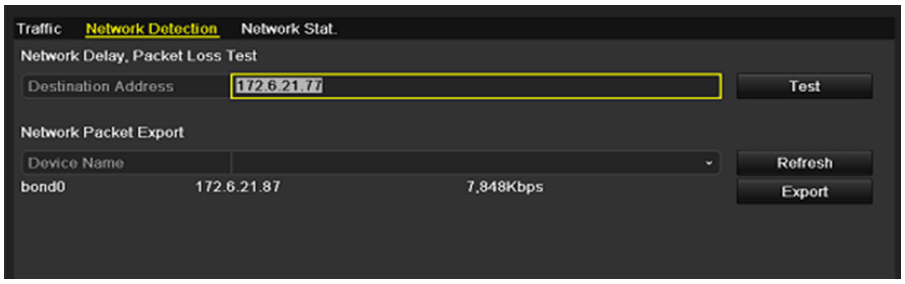


Figure 9.25 Network Detection Interface

3. Enter the destination address in the text field of **Destination Address**.
4. Click the **Test** button to start testing network delay and packet loss. The testing result pops up on the window. If the testing is failed, the error message box will pop up as well. Refer to Figure 9.26.

Figure 9.26 Testing Result of Network Delay and Packet Loss

9.4.2 Exporting Network Packet

Purpose:

By connecting the NVR to network, the captured network data packet can be exported to USB-flash disk, SATA/eSATA CD-RW and other local backup devices.

Steps:

1. Enter the Network Traffic interface.
   Menu >Maintenance>Net Detect
2. Click the **Network Detection** tab to enter the Network Detection interface.

3. Select the backup device from the dropdown list of Device Name, as shown in Figure 9.27.

   Note: Click the **Refresh** button if the connected local backup device cannot be displayed. When it fails to detect the backup device, please check whether it is compatible with the NVR. You can format the backup device if the format is incorrect.

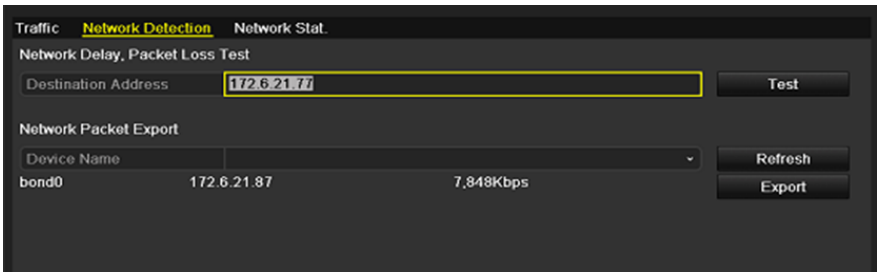


Figure 9.27 Export Network Packet

4. Click the **Export** button to start exporting.
5. After the exporting is complete, click **OK** to finish the packet export, as shown in Figure 9.28.

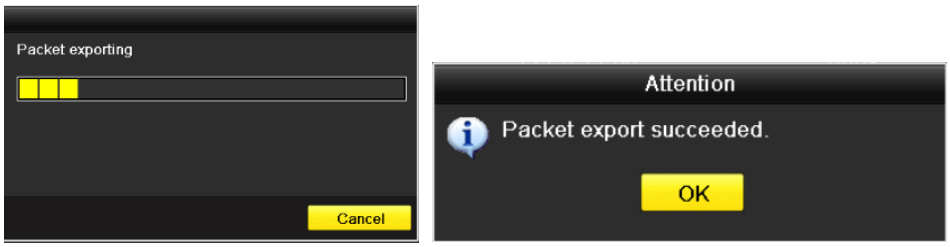


Figure 9. 28 Packet Export Attention

Note: Up to 1M data can be exported each time.

9.4.3 Checking the Network Status

Purpose:

You can also check the network status and quick set the network parameters in this interface.

Steps:

1. Enter the Network Traffic interface.

   Menu > Maintenance > Net Detect

2. Click the **Network Detection** tab to enter the Network Detection interface.

3. Click the **Status** button to get the network status.

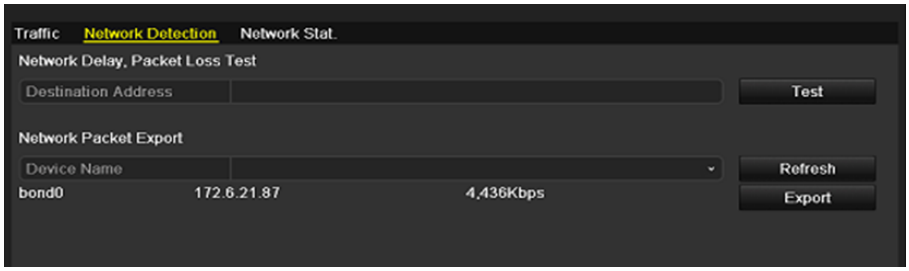


Figure 9.29 Network status checking

If the network is normal, the following message box will pop up.

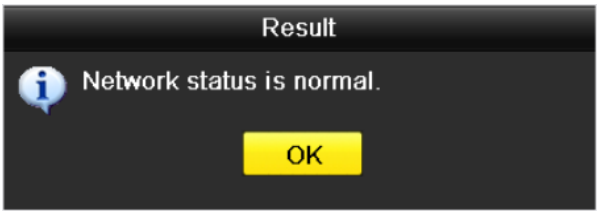


Figure 9.30 Network status checking result

If the message box pops up with other information instead of this one, you can click **Network** button to show the quick setting interface of the network parameters.

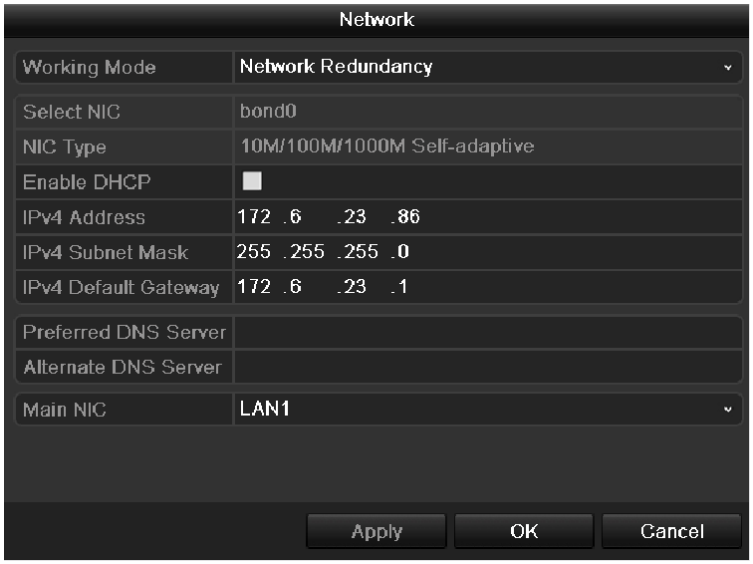


Figure 9.31 Network parameters configuration

9.4.4 Checking Network Statistics

Purpose:

You can check the network status to obtain the real-time information of NVR.

Steps:

1. Enter the Network Detection interface.

   Menu>Maintenance>Net Detect

2. Choose the **Network Stat.** tab.

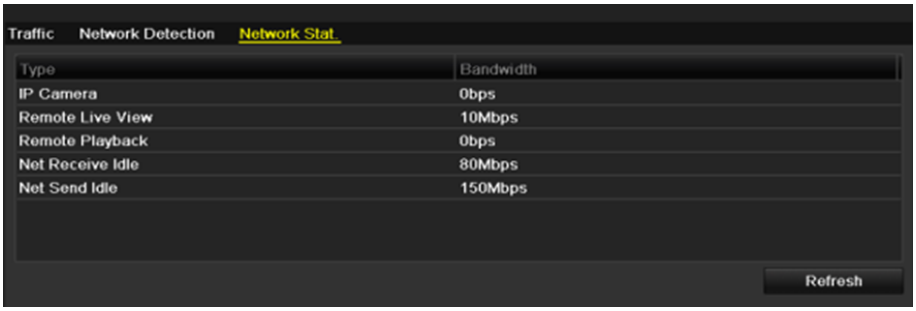


Figure 9.32 Network Stat. Interface

3. Check the bandwidth of IP Camera, bandwidth of Remote Live View, bandwidth of Remote Playback, bandwidth of Net Receive Idle and bandwidth of Net Send Idle.
4. You can click **Refresh** button to get the newest status.

C H A P T E R 1 0

RAID Configuration

10.1 Creating an Array

Purpose:

RAID (redundant array of independent disks) is a storage technology that combines multiple disk drive components into a logical unit. A RAID setup stores data over multiple hard disk drives to provide enough redundancy so that data can be recovered if one disk fails. Data is distributed across the drives in one of several ways called "RAID levels", depending on what level of redundancy and performance is required. The DS-9664NI-RH supports RAID0, RAID1, RAID5 and RAID10.

Before you start:

Please install the HDD (s) properly and it is recommended to use the same enterprise-level HDDs (including model and capacity) for array creation and configuration so as to maintain reliable and stable running of the disks.

Introduction:

The DS-9664NI-RH series can store the data (such as record, picture, log information) in the HDD only after you have created the virtual disk, or you have configured network HDD (refer to *Chapter 11.2 Managing Network HDD*). Our device provides two ways for creating the virtual disk, including one-touch configuration and manual configuration.

Refer to the following procedure for creating and configuring the RAID:

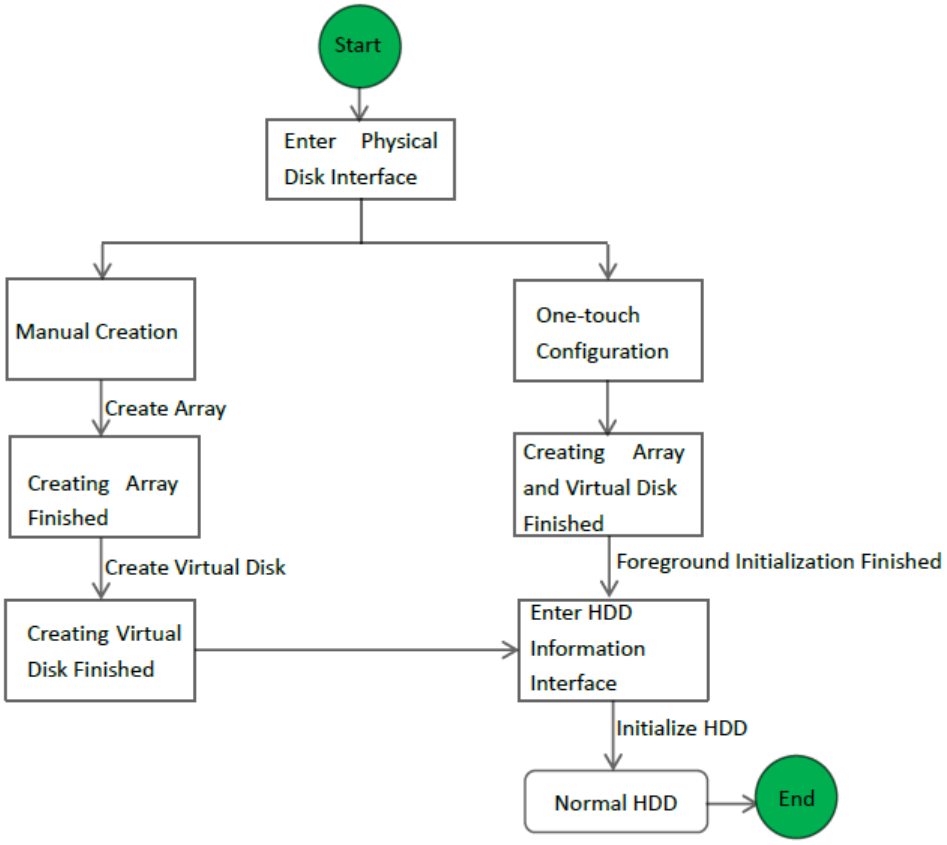


Figure 10.1 Procedure of Creating Array

10.1.1 Enabling RAID

Purpose:

After enabling the RAID function, you should create and configure the array the before operating the recording video files.

Steps:

1. Enter the Advanced interface of HDD disk mode.

   Menu >HDD>Advanced

2. Check the checkbox of **Enable RAID** to enable the RAID function, as shown in Figure 10.1.

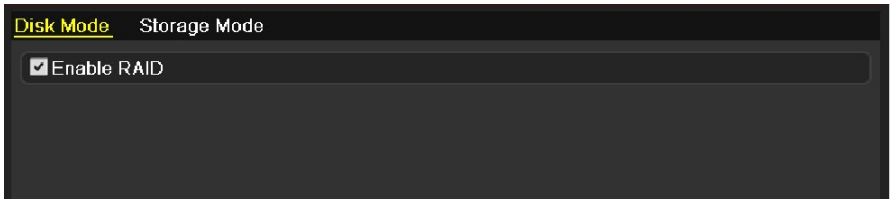


Figure 10.2 Enable RAID

3. Click **Apply**, and the following message box pops up:

Figure 10.3 Message Box

4. Click **Yes** to reboot the device to validate the new settings.

10.1.2 Creating an Array by One-touch Configuration

Purpose:

Through one-touch configuration, you can quickly create the disk array and virtual disk. By default, the array type to create is RAID5.

Steps:

1. Enter the Physical Disk interface.

   Menu >HDD>RAID>Physical Disk

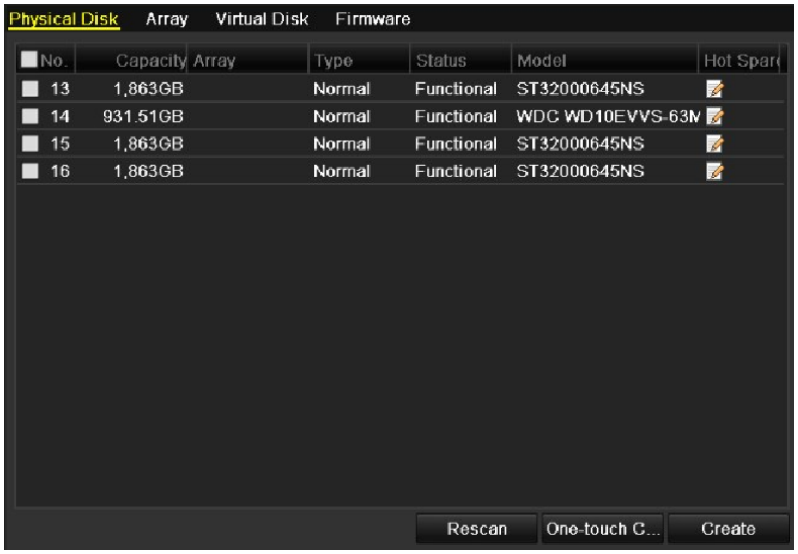


Figure 10.4 Physical Disk List

2. Select the physical disks from the list for creating the array.
3. Click the **One-touch Config** button to start creating the array.

Notes:

1) As the default array type to create is RAID 5, at least 3 hard disks must be installed before operation.
2) When the One-touch Array Configuration is selected, the device can automatically enable the installed HDDs for array creation. Edit the Array Name and then click the **OK** button to start array configuration.

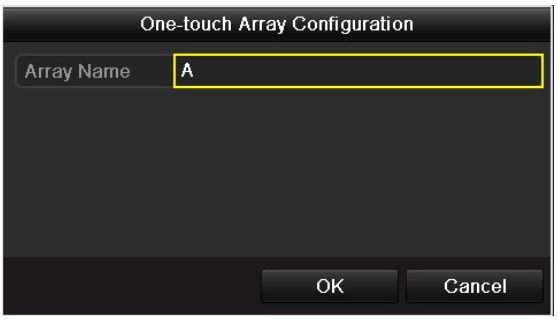


Figure 10.5 Edit Array Name

4. When the array configuration is complete, click the **OK** button on the pop-up Attention box to finish the settings.

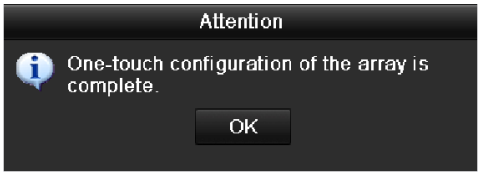


Figure 10.6 Message Box

Notes:

1) If you install 4 HDDs or above for one-touch configuration, a hot spare disk will be set by default.

It is recommended to set hot spare disk for automatically rebuilding the array when the array is abnormal.

2) By default, one-touch configuration creates an array and a virtual disk.

5. You can click **Array** tab to view the information of the successfully created array.

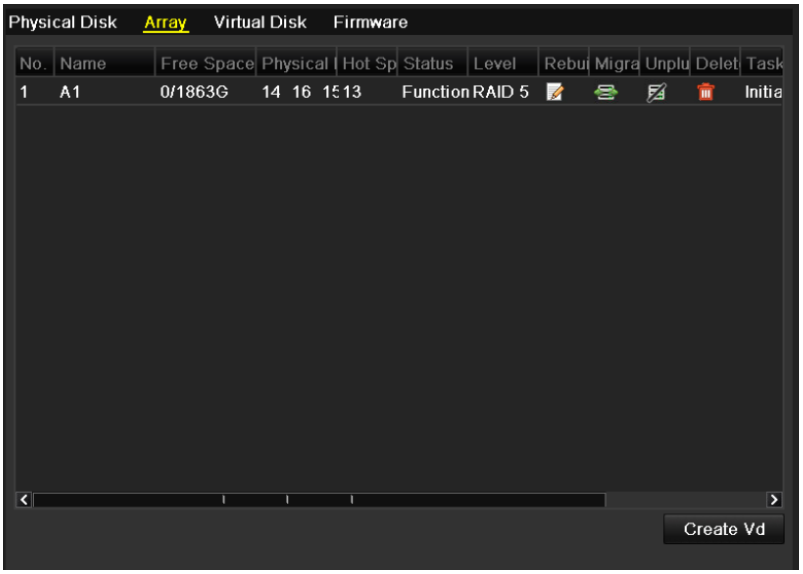


Figure 10.7 List of Created Array

6. Click **Virtual Disk** tab to view the automatically created virtual disk.

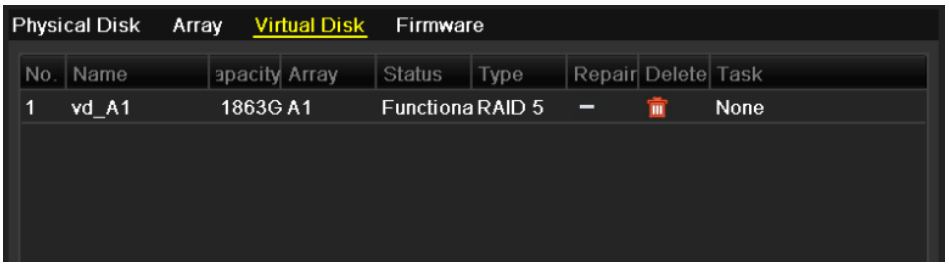


Figure 10.8 Created Virtual Disk

7. You can view the virtual disk in the HDD Information interface (Menu>HDD>General). For operation guide of initializing the virtual disk, please refer to *Chapter 11.1 Initializing HDDs*.

10.1.3 Creating an Array Manually

Purpose:

You can manually create the array of RAID 0, RAID 1, RAID 5 and RAID 10.

Note: In this section, we take RAID 5 as an example to describe the manual configuration of array and virtual disk.

Steps:

1. Enter the Physical Disk interface.

Menu>HDD>RAID>Physical Disk

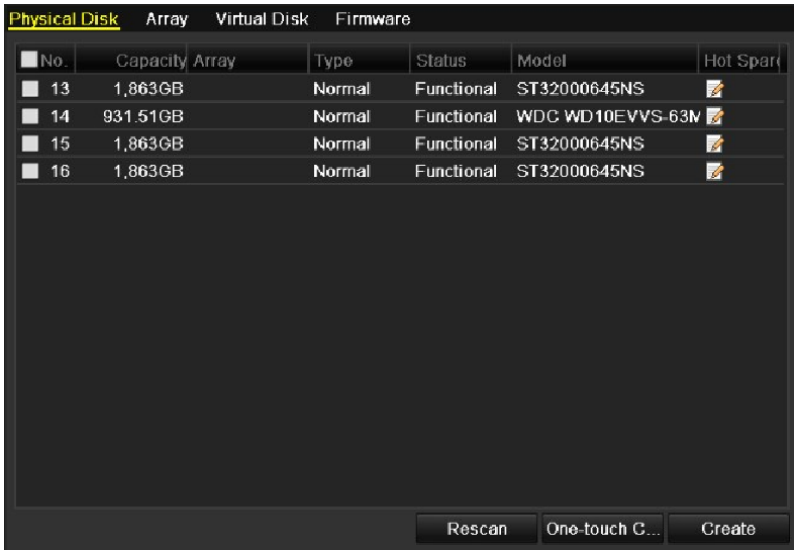


Figure 10.9 Physical Disk List

2. Create the array.

1) Click the **Create** button to enter the Create Array interface.

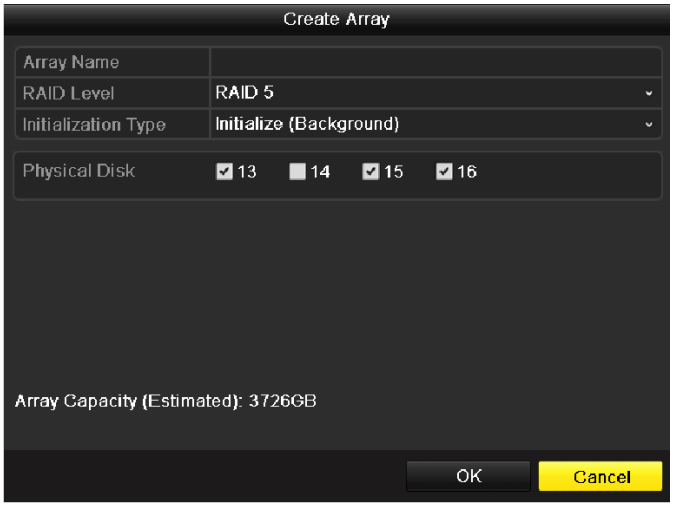


Figure 10.10 Create Array

2) Edit the Array Name.

3) Set the RAID Level to RAID 0, 1, 5 or 10.

4) Select the initialization type.

Initialization (Background): The background initialization usually takes long time, which depends on the HDD capacity. During the background initialization, the virtual disk is allowed to use.

Initialization (Fast): The fast initialization usually takes short time, which is not relevant to the HDD capacity.

5) Select the physical disks that you want to configure array.

6) Click the **OK** button to finish the array creation.

Note: If the number of HDDs you select is not compatible with the requirement of the RAID level, the error message box will pop up.

Figure 10.11 Error Message Box

7) You can click the **Array** tab to view the successfully added array.

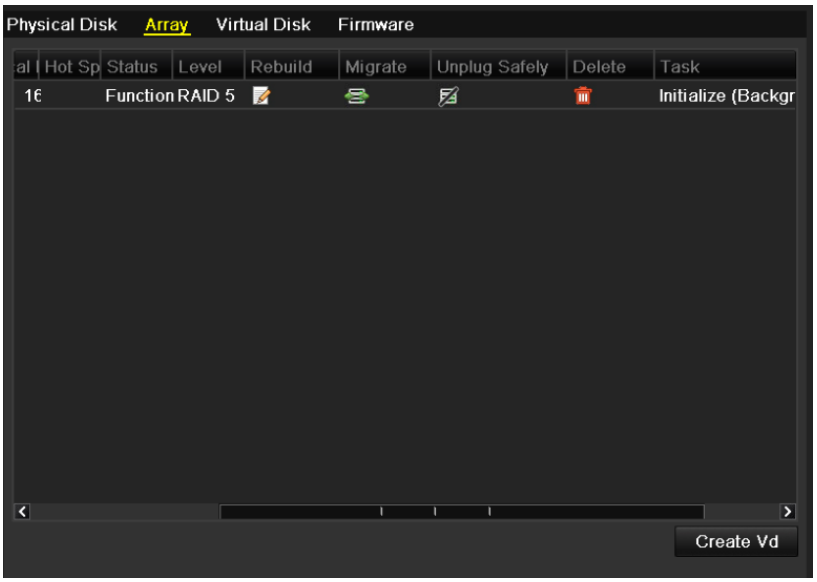


Figure 10.12 Array Information

3. Create the virtual disk.

1) Click to select an array from the list and click **Create Vd** to enter the Create Virtual Disk interface.

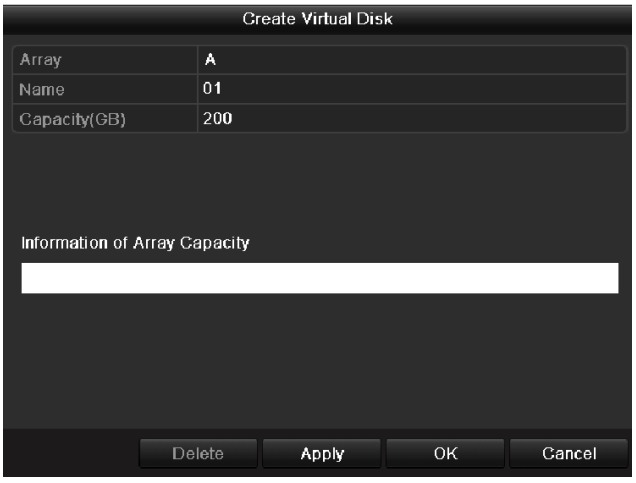


Figure 10.13 Create Virtual Disk Interface

2) Edit the name of virtual disk and set the capacity.

Note: At least 100GB capacity must be configured for each virtual disk.

3) Click **Apply** to confirm the creation of virtual disk.

4) Click the Information of Array Capacity bar and repeat step2~step3 to create multiple virtual disks.

Note: It is recommended to create one virtual disk for an array. Up to 16 virtual disks can be created for all arrays.

5) Click **OK** to return to the array settings menu.

6) Click the **Virtual Disk** tab to enter the Virtual Disk interface. The created virtual disks will be listed on the interface.

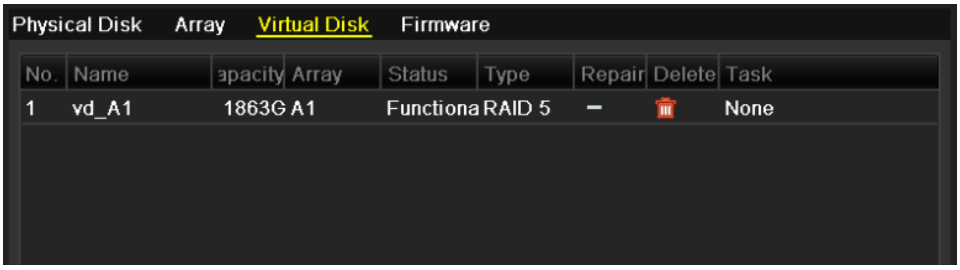


Figure 10.14 Virtual Disk Information

4. Initialize the virtual disk.

1) After the foreground initialization of the virtual disk is complete, the virtual disk will be displayed in the HDD Information interface.

Menu>HDD>General

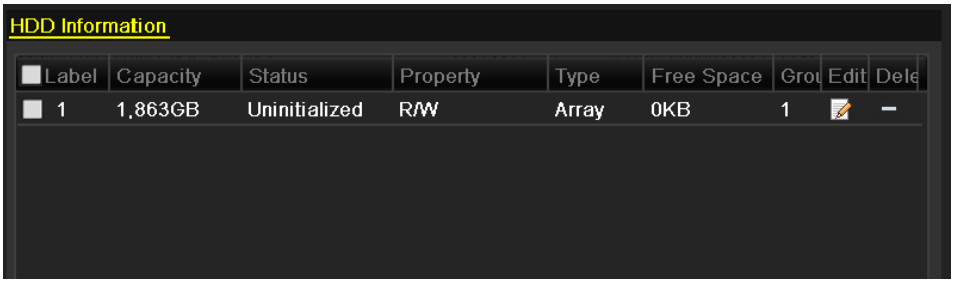


Figure 10.15 HDD Information

2) Select the disk from the list and click **Init** to initialize the virtual disk. When the initialization is finished, the disk status changes from *Uninitialized* to *Normal*.

5. Set the hot spare disk.

1) Select the disk from the list for setting the hot spare.

Note: It is recommended to use the same HDDs (including model and capacity) for setting hot spare so as to maintain reliable and stable running of the disks.

2) Click the icon from the list to enter the Set Hot Spare interface.

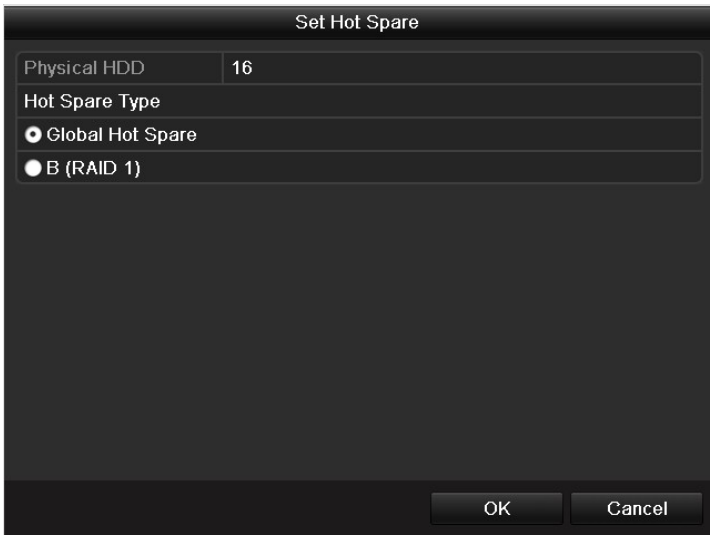


Figure 10.16 Set Hot Spare

3) Set the hot spare type of the selected HDD to Global Hot Spare or the specified hot spare for the existing array.

Global hot spare: it can be used as the hot spare for any array created in the system.

Specified hot spare: it can be used as the hot spare for the specified array only.

4) Click the **OK** button to finish the settings.

When the system has detected HDD exception or the array is in *Degraded* status, the auto-rebuild task will be automatically started.

10.2 Rebuilding an Array

Purpose:

The array rebuilding function is used for rescuing the data from the unstable or failure physical disk existed in the array, aiming to protect data and recover the completeness of the array.

The working status of array includes *Functional*, *Degraded* and *Offline*. By viewing the array status, you can take immediate and proper maintenance for the disks so as to ensure the high security and reliability of the data stored in the disk array.

When there is no disk loss in the array, the working status of array will change to *Functional*; when the number of lost disks has exceeded the limit, the working status of array will change to *Offline*; in other conditions, the working status is *Degraded*.

When the array is in *Degraded* status, you can restore it to *Functional* by array rebuilding.

10.2.1 Automatically Rebuilding Array

Purpose:

When the virtual disk is in Degraded status, the device can start rebuilding the array automatically with the hot spare disk to ensure the high security and reliability of the data.

Steps:

1. Enter the Array Settings interface. The status of the array is Disk Loss. Since the hot spare disk is configured, it will be automatically used for array rebuilding.

Menu > HDD > RAID > Array

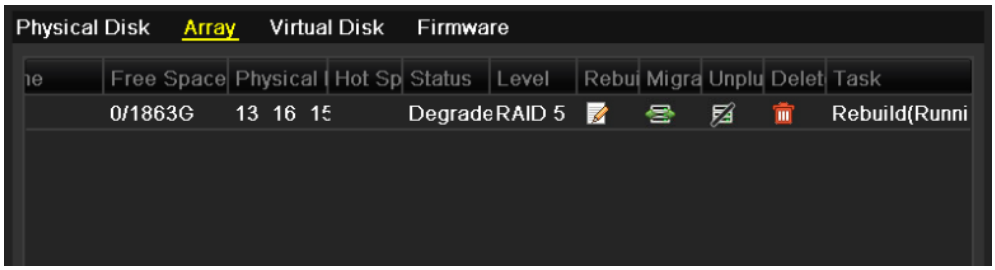


Figure 10.17 Array Settings Interface

2. Enter the Array interface to view the rebuilding status.

Note: If there is no hot spare disk after rebuilding, it is recommended to install a HDD into the device and set is as a hot spare disk to ensure the high security and reliability of the array. For detailed operation guide, please refer to Step5 of *Chapter 10.1.2*.

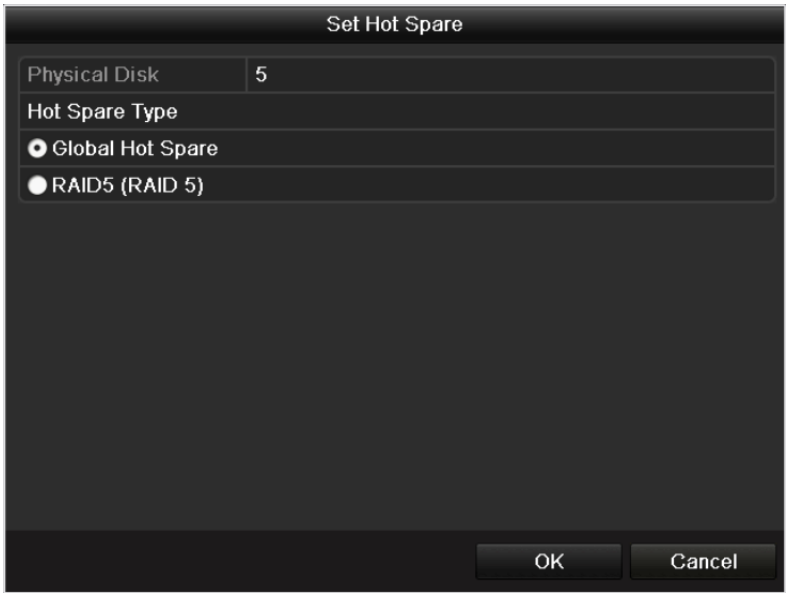


Figure 10.18 Set Hot Spare Disk Interface

10.2.2 Manually Rebuilding Array

You can also select the idle physical HDD for manual rebuilding of array when the system has detected HDD exception or the array is in *Degraded* status.

Steps:

1. Enter the Array interface.

   Menu >HDD>RAID>Array

Figure 10.19 Degraded Array

2. Select the array from the list for rebuilding.
3. Click to enter the Rebuild Array interface.

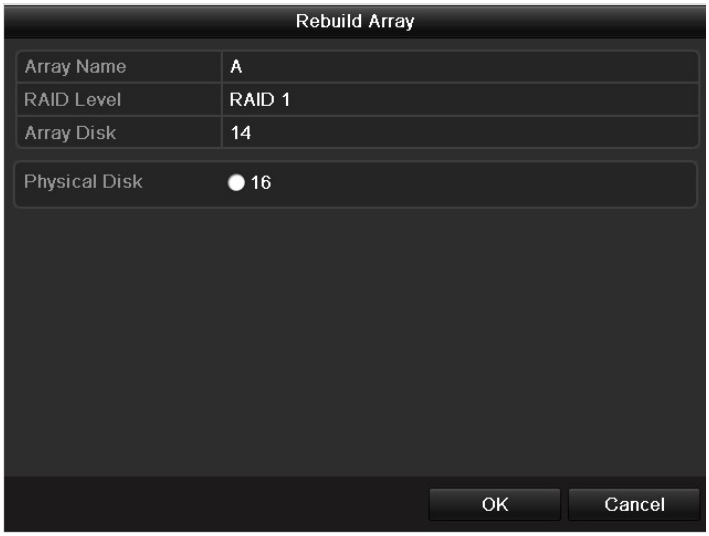


Figure 10.20 Rebuild Array

4. Select the physical disk for array rebuilding.

Note: The physical disk selected for array rebuilding must have the same capacity with the failure disk.

5. Click the **OK** button to start the array rebuilding.
6. Return to the Array interface to view the rebuilding status under Task bar.

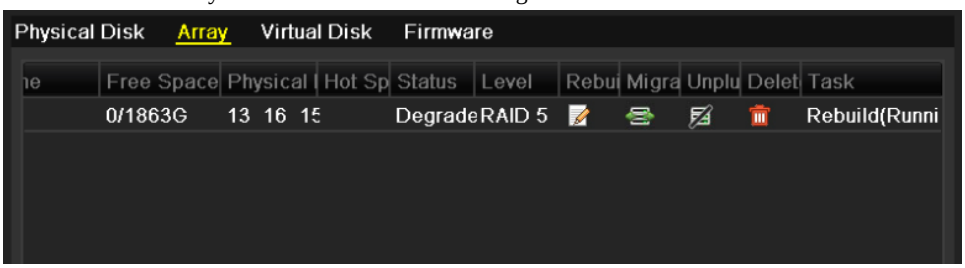


Figure 10.21 Rebuild Array

10.3 Repairing Virtual Disk

When the virtual disk is in *Degraded* or *Functional* status, yet it cannot be viewed on the HDD information list, you need to perform the repairing operation.

Steps:

1. Enter the Array interface.
   Menu >HDD>RAID>Array
2. Click the **Virtual Disk** tab to enter the Virtual Disk interface.

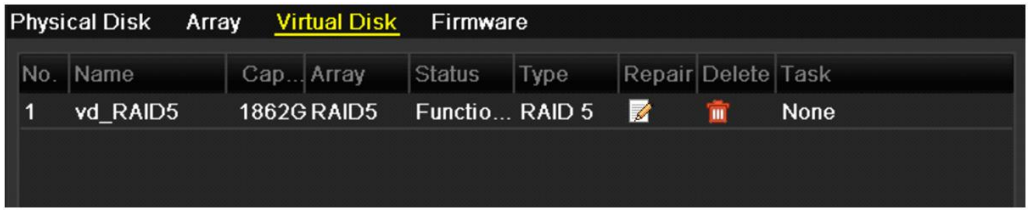


Figure 10.22 Virtual Disk Interface

3. Select the virtual disk from the list to be repaired.
4. Click to start repairing the selected virtual disk. After successfully repairing, the following message box will pop up. Click **OK** to finish the settings.

Figure 10.23 Repairing Virtual Disk Successfully

The disk shows again in the HDD Information interface (Menu>HDD>General).

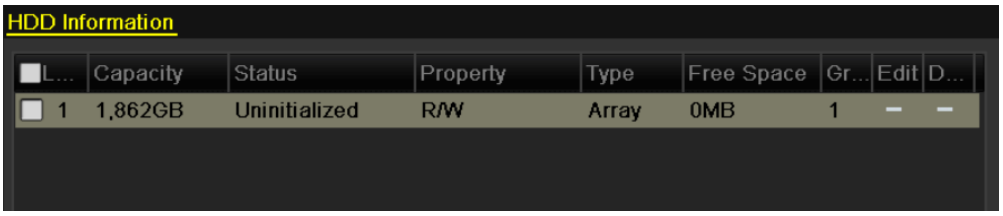


Figure 10.24 HDD Information Interface

10.4 Deleting Array/Virtual Disk

Note: Before deleting the array, the virtual disk(s) existing under this array must be deleted first. Deleting array and virtual disk will cause to delete all the data saved in the disk.

10.4.1 Deleting a Virtual Disk

Steps:

1. Enter the Array interface.
   Menu >HDD>RAID>Array
2. Click the **Virtual Disk** tab to enter the Virtual Disk interface.

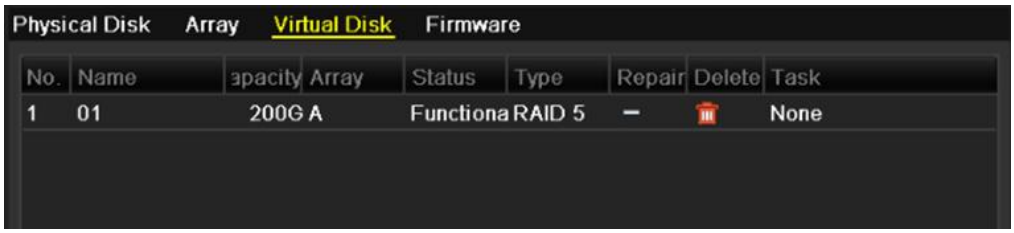


Figure 10.25 Virtual Disk Interface

3. Select the virtual disk from the list to be deleted.
4. Click the button to delete it.

Figure 10.26 Confirm Virtual Disk Deletion

5. In the pop-up message box, click the **Yes** button to confirm the virtual disk deletion.
   Note: Deleting virtual disk will cause all the data saved in the disk to be deleted as well.

10.4.2 Deleting an Array

Note: If all the virtual disks existing under an array have been deleted, then you can delete that array.

Steps:

1. Enter the Array interface.
   Menu >HDD>RAID>Array

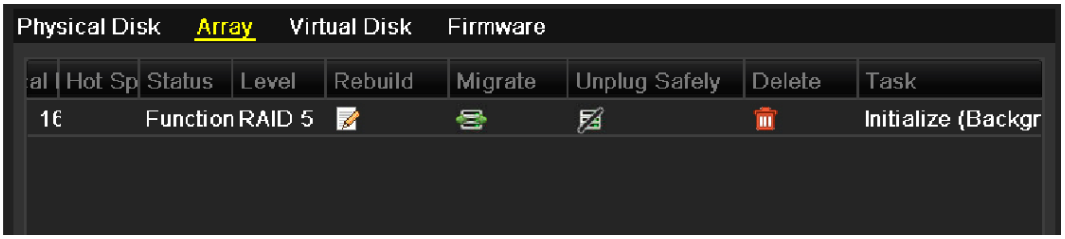


Figure 10.27 Array List

2. Select the array from the list to be deleted.
3. Click the **Delete** button.
4. In the pop-up message box, click the **Yes** button to confirm the array deletion.

Figure 10.28 Message Box for Array Deletion

Note: Before deleting the array, all virtual disks existing under this array must be deleted first in the Virtual HDD interface.

10.5 Migrating an Array

Purpose:

When the remaining storage space is lower than the actual needs, you can take array migration online.

Steps:

1. Enter the Physical Disk Settings interface. At least one available physical disk should exist for the array migration.
   Menu>HDD>RAID>Physical Disk

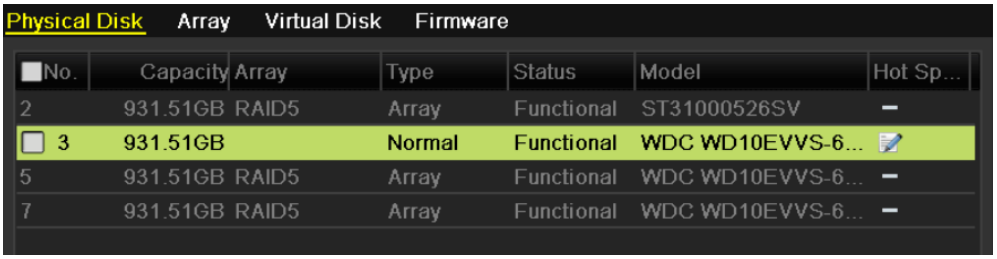


Figure 10.29 Physical Disk Settings Interface

2. Click the **Array** tab to enter the Array Settings interface.

Figure 10.30 Array Settings Interface

3. Select the array to be migrated and click to enter the Migrate Array interface.
   Notes: 1. Only migrating from RAID 5 to RAID 5 is supported by the device. 2. Please do not unplug the disk in the process of migration.

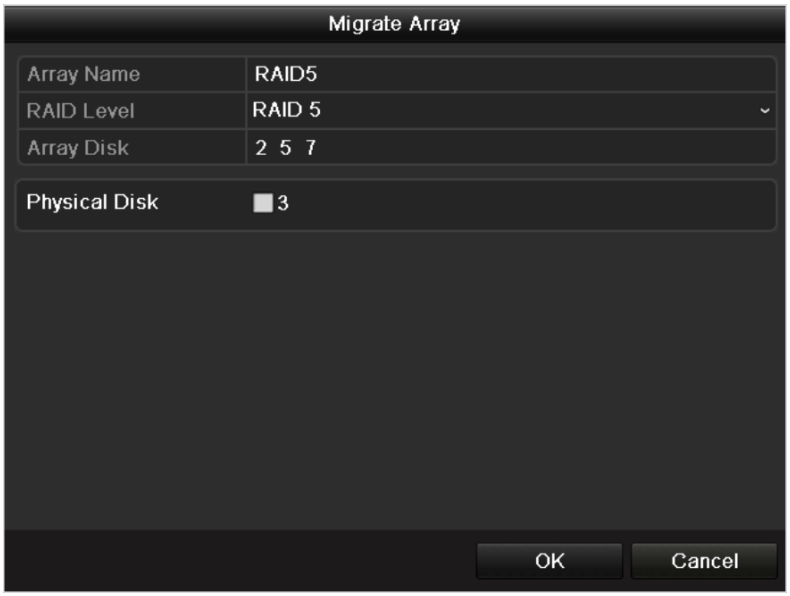


Figure 10.31 Migrate Array Interface

4. Select the available physical disk(s) and click **OK** to confirm the settings. The message box of "Do not unplug the physical disk when it is under migration" will pop up. Click **OK** to start migration.
5. You can enter the Array Settings interface (Menu>HDD>RAID>Array) to check the process of the migration.

Figure 10.32 Array Setting Interface

Note: After the array migration is finished, the array capacity will be refreshed. You need to create new virtual disk (s) or delete the old virtual disk (s) first and create again so as to ensure the new array capacity to be used for data storage.

10.6 Unplugging Safely

Purpose:

Under normal working status, if the failure of physical disk existed in the array, you can unplug it safely to remove the failed disk.

Steps:

1. Enter the Array interface.
   Menu >HDD>RAID>Array

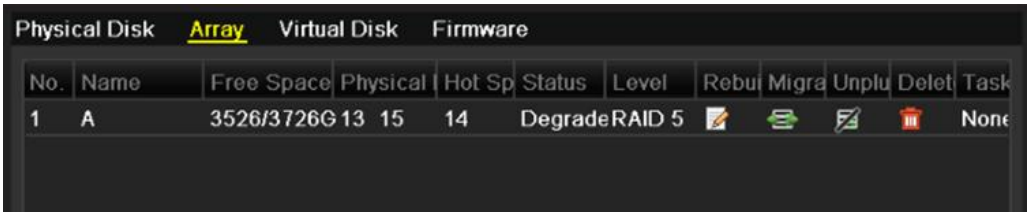


Figure 10.33 Array List

2. Select the array from the list to be unplugged safely.
3. Click to unplug the array safely. And the following message box pops up:

Figure 10.34 Message Box of Unplug Safely

4. After the array is unplugged safely, all disks of this array will become the normal physical disks.

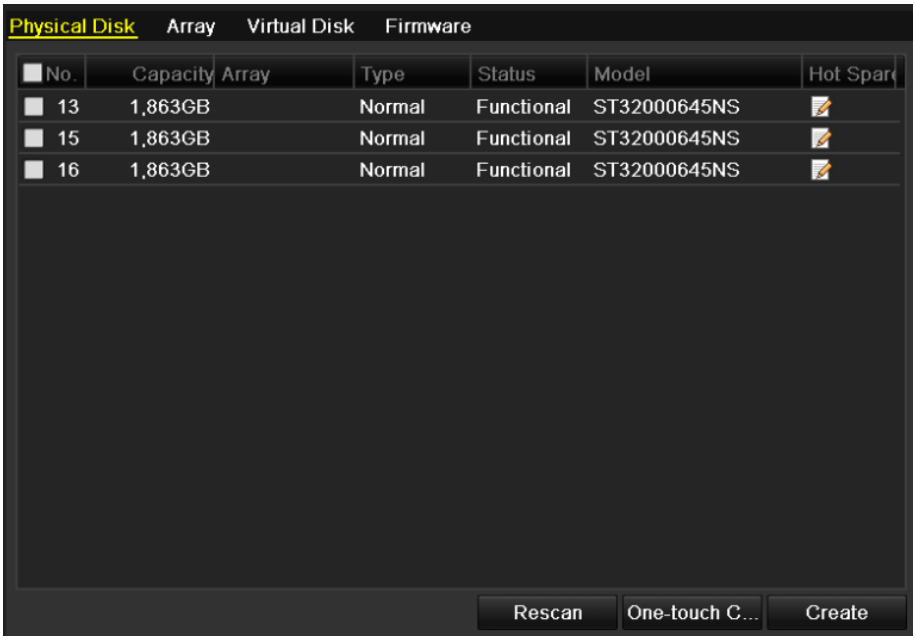


Figure 10.35 Physical Disk List

You may click the **Rescan** button to rescan the disks and view their former array and virtual disk information.

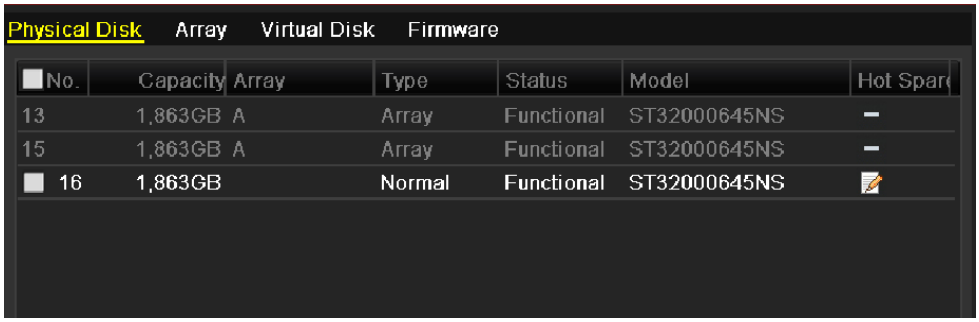


Figure 10.36 Rescanned Physical Disk (s)

10.7 Checking Firmware

Purpose:

You can enter the firmware interface to view the firmware information of RAID and set the background task speed.

Steps:

1. Enter the Firmware interface.

   Menu >HDD>RAID>Firmware

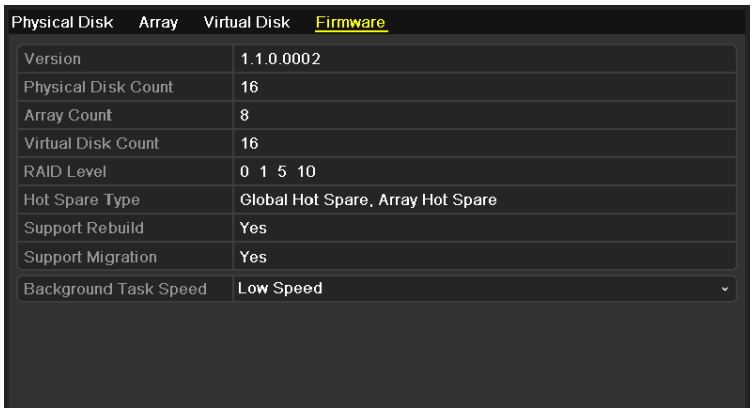


Figure 10.37 Checking Firmware of RAID

2. Check the firmware information of RAID, including the version, physic disk count, array count, supported RAID level, hot spare type, rebuild and migration functions.
3. Configure the speed of background tasks, like initializing, rebuilding, repairing and migrating, to low speed, medium speed or high speed.
4. Click **Apply** to save the settings.

C H A P T E R 1 1

HDD Management

11.1 Initializing HDDs

Purpose:

A newly installed hard disk drive (HDD) must be initialized before it can be used with your NVR.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD> General.

Figure 11.1 HDD Information Interface

2. Select HDD to be initialized.
3. Click the **Init** button.

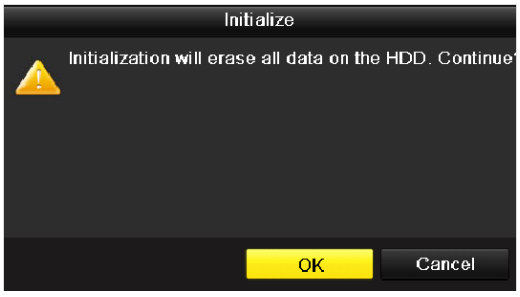


Figure 11.2 Confirm Initialization

4. Select the **OK** button to start initialization.

Figure 11.3 Start Initialization

5. After the HDD has been initialized, the status of the HDD will change from *Uninitialized* to *Normal*.

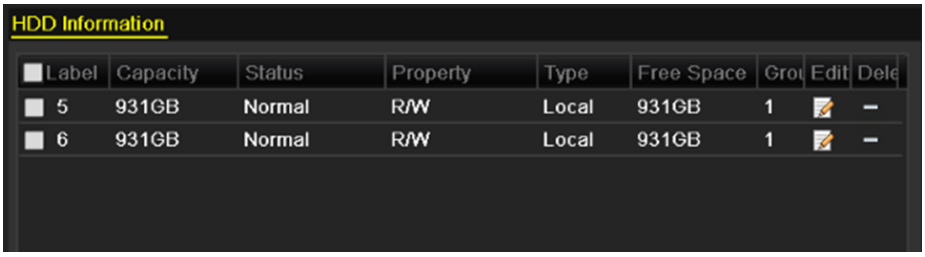


Figure 11.4 HDD Status Changes to Normal

Note: Initializing the HDD will erase all data on it.

11.2 Managing Network HDD

Purpose:

You can add the allocated NAS or disk of IP SAN to NVR, and use it as network HDD.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD>General.

Figure 11.5 HDD Information Interface

2. Click the **Add** button to enter the Add NetHDD interface, as shown in Figure 10.6.

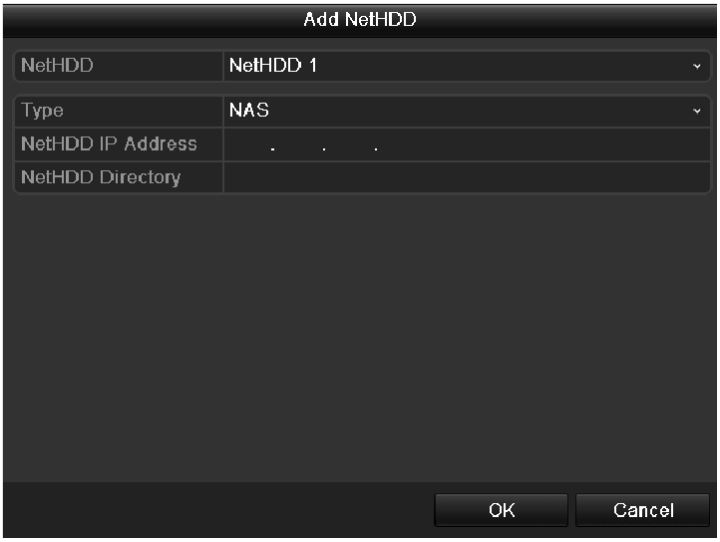


Figure 11.6 HDD Information Interface

3. Add the allocated NetHDD.

4. Select the type to NAS or IP SAN.
5. Configure the NAS or IP SAN settings.

- **Add NAS disk:**

1) Enter the NetHDD IP address in the text field.
2) Enter the NetHDD Directory in the text field.
3) Click the **OK** button to add the configured NAS disk.

Note: Up to 8 NAS disks can be added.

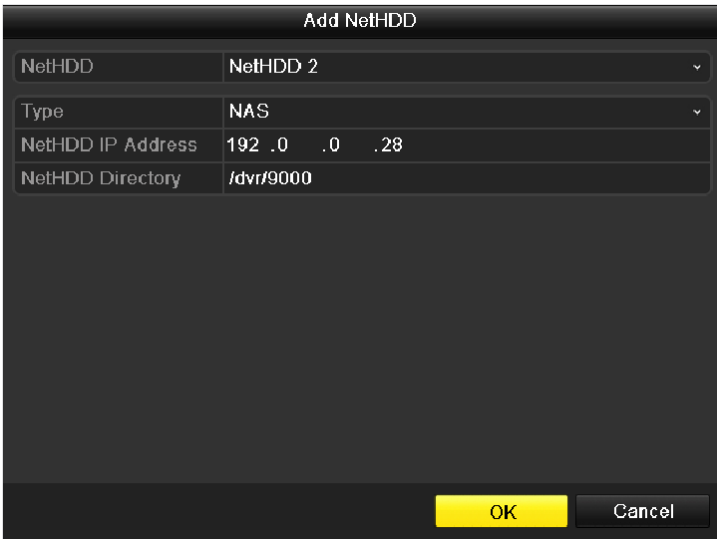


Figure 11.7 Add NAS Disk

- **Add IP SAN:**

1) Enter the NetHDD IP address in the text field.
2) Click the **Search** button to the available IP SAN disks.
3) Select the IP SAN disk from the list shown below.
4) Click the **OK** button to add the selected IP SAN disk.

Note: Up to 1 IP SAN disk can be added.

Figure 11.8 Add IP SAN Disk

6. After having successfully added the NAS or IP SAN disk, return to the HDD Information menu. The

added NetHDD will be displayed in the list.

Note: If the added NetHDD is uninitialized, please select it and click the **Init** button for initialization.

Figure 11.9 Initialize Added NetHDD

11.3 Managing eSATA

Purpose:

When there is an external eSATA device connected to NVR, you can configure eSATA for the use of Record/Capture or Export, and you can manage the eSATA in the NVR.

Steps:

1. Enter the Advanced Record Settings interface.
   Menu >Record>Advanced
2. Select the eSATA type to Export or Record/Capture from the dropdown list of **eSATA**.
   Export: use the eSATA for backup. Refer to *Backup using eSATA HDDs* in *Chapter 7.1.3 Backing up by Normal Video Search* for operating instructions.
   Record/Capture: use the eSATA for record/capture. Refer to the following steps for operating instructions.

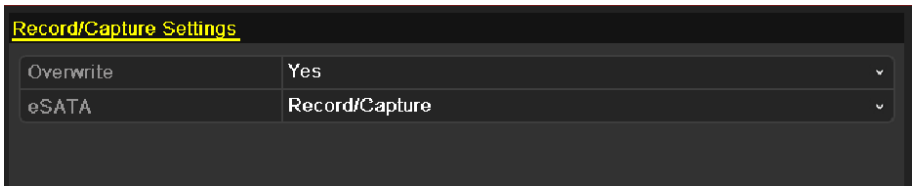


Figure 11.10 Set eSATA Mode

3. When the eSATA type is selected to Record/Capture, enter the HDD Information interface.
   Menu > HDD>General
4. Edit the property of the selected eSATA, or initialize it if required.
   Note: Two storage modes can be configured for the eSATA when it is used for Record/Capture. Please refer to *Chapter 11.4* and *Chapter 11.5* for details.

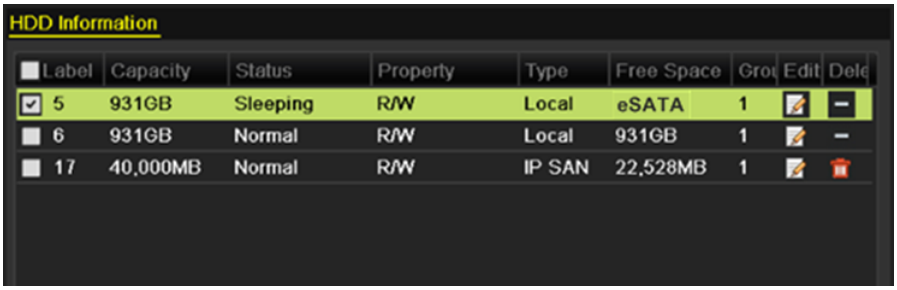


Figure 11.11 Initialize Added NetHDD

11.4 Managing HDD Group

11.4.1 Setting HDD Groups

Purpose:

Multiple HDDs can be managed in groups. Video from specified channels can be recorded onto a particular HDD group through HDD settings.

Steps:

1. Enter the Storage Mode interface.
   Menu > HDD > Advanced
2. Set the **Mode** to Group, as shown in Figure 11.12.

Figure 11.12 Storage Mode Interface

3. Click the **Apply** button and the following Attention box will pop up.

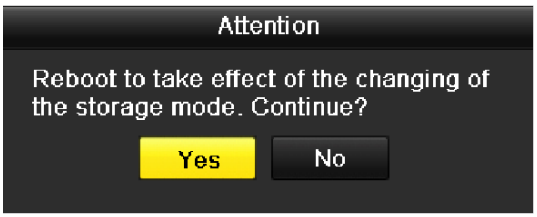


Figure 11.13 Attention for Reboot

4. Click the **Yes** button to reboot the device to activate the changes.
5. After reboot of device, enter the HDD Information interface.
   Menu > HDD> General
6. Select HDD from the list and click the icon to enter the Local HDD Settings interface, as shown in Figure 11.14.

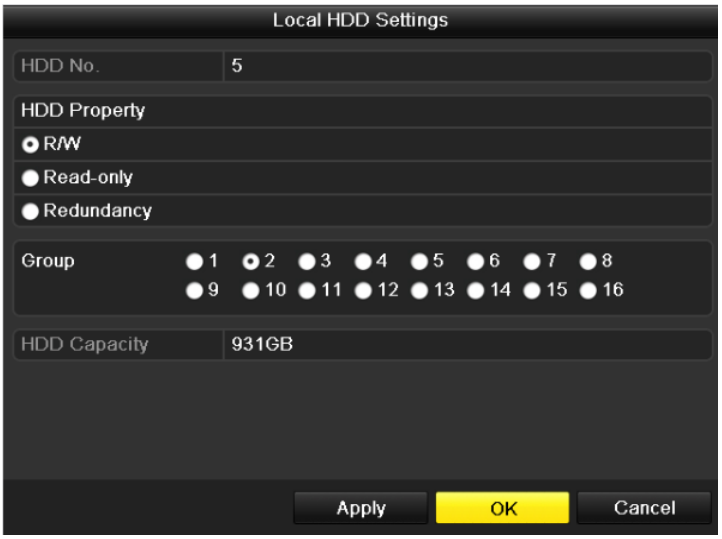


Figure 11.14 Local HDD Settings Interface

7. Select the Group number for the current HDD.

Note: The default group No. for each HDD is 1.

8. Click the **OK** button to confirm the settings.

Figure 11.15 Confirm HDD Group Settings

9. In the pop-up Attention box, click the **Yes** button to finish the settings.

11.4.2 Setting HDD Property

Purpose:

The HDD property can be set to redundancy, read-only or read/write (R/W). Before setting the HDD property, please set the storage mode to Group (refer to step1-4 of *Chapter 11.4.1 Setting HDD Groups*).

A HDD can be set to read-only to prevent important recorded files from being overwritten when the HDD becomes full in overwrite recording mode.

When the HDD property is set to redundancy, the video can be recorded both onto the redundancy HDD and the R/W HDD simultaneously so as to ensure high security and reliability of video data.

Steps:

1. Enter the HDD Information interface.

   Menu > HDD> General

2. Select HDD from the list and click the icon to enter the Local HDD Settings interface, as shown in Figure 10.16.

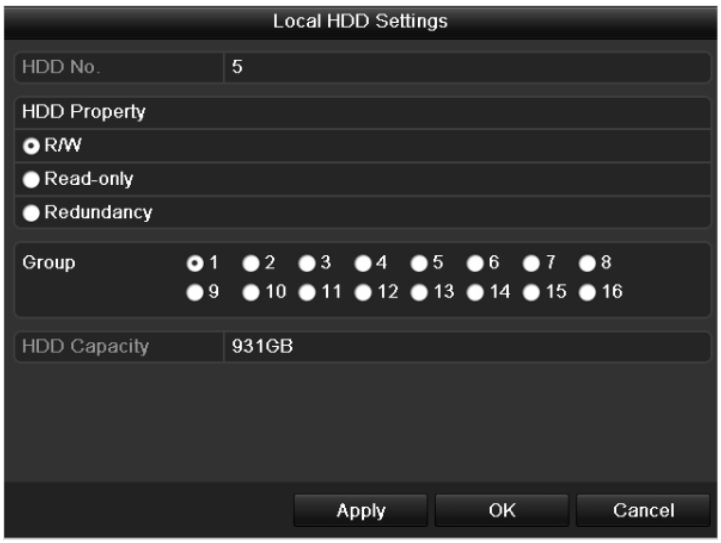


Figure 11.16 Set HDD Property

3. Set the HDD property to R/W, Read-only or Redundancy.
4. Click the **OK** button to save the settings and exit the interface.
5. In the HDD Information menu, the HDD property will be displayed in the list.

Note: At least 2hard disks must be installed on your NVR when you want to set a HDD to Redundancy, and there is one HDD with R/W property.

11.5 Configuring Quota Mode

Purpose

Each camera can be configured with allocated quota for the storage of recorded files or captured pictures.

Steps:

1. Enter the Storage Mode interface.

   Menu > HDD > Advanced

2. Set the **Mode** to Quota, as shown in Figure 11.17.

   Note: The NVR must be rebooted to activate the new settings.

Figure 11.17 Storage Mode Settings Interface

3. Select a camera for which you want to configure quota.
4. Enter the storage capacity in the text fields of **Max. Record Capacity (GB)** and **Max. Picture Capacity (GB)**, as shown in Figure 11.18.

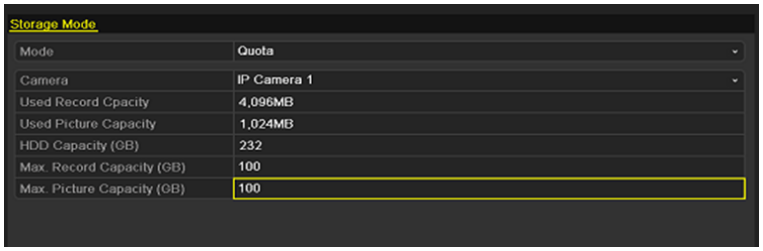


Figure 11.18 Configure Record/Picture Quota

5. You can copy the quota settings of the current camera to other cameras if required. Click the **Copy** button to enter the Copy Camera menu, as shown in Figure 11.19.

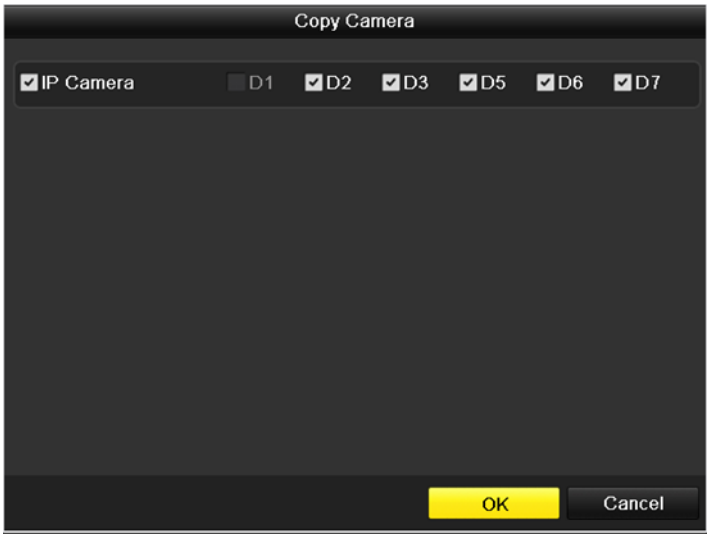


Figure 11.19 Copy Settings to Other Camera(s)

6. Select the camera (s) to be configured with the same quota settings. You can also click the checkbox to select all cameras.
7. Click the **OK** button to finish the Copy settings and back to the Storage Mode interface.
8. Click the **Apply** button to apply the settings.

   Note: If the quota capacity is set to *0*, then all cameras will use the total capacity of HDD for record and picture capture.

11.6 Checking HDD Status

Purpose:

You may check the status of the installed HDDs on NVR so as to take immediate check and maintenance in case of HDD failure.

Checking HDD Status in HDD Information Interface

Steps:

1. Enter the HDD Information interface.

   Menu > HDD>General

2. Check the status of each HDD which is displayed on the list, as shown in Figure 11.20.

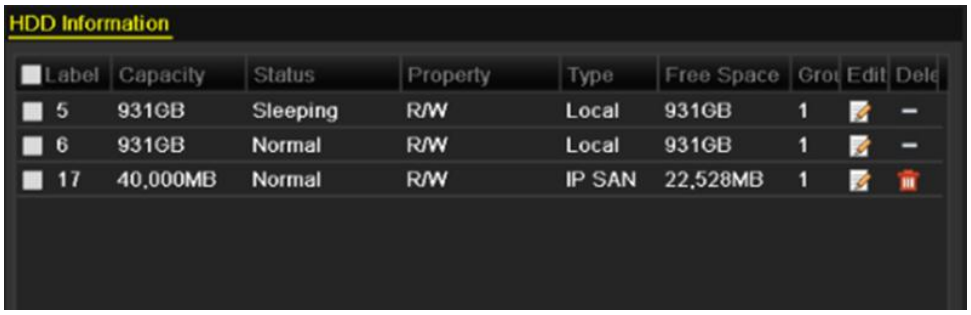


Figure 11.20 View HDD Status (1)

Note: If the status of HDD is *Normal* or *Sleeping*, it works normally. If the status is *Uninitialized* or *Abnormal*, please initialize the HDD before use. And if the HDD initialization is failed, please replace it with

a new one.

Checking HDD Status in HDD Information Interface

Steps:

1. Enter the System Information interface.

   Menu >Maintenance > System Info

2. Click the **HDD** tab to view the status of each HDD displayed on the list, as shown in Figure 11.21.

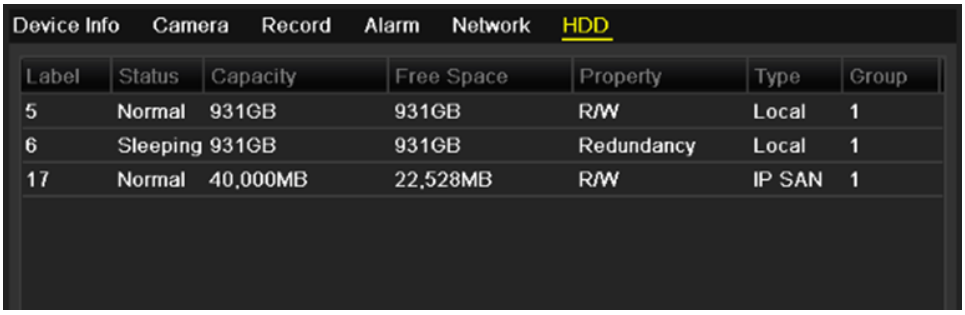


Figure 11.21 View HDD Status (2)

11.7 Checking S.M.A.R.T. Information

Purpose:

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a monitoring system for HDD to detect and report on various indicators of reliability in the hopes of anticipating failures.

Steps:

1. Enter the S.M.A.R.T. Settings interface.

   Menu > HDD >S.M.A.R.T.

2. Select the HDD to view its S.M.A.R.T information list, as shown in Figure 11.22.

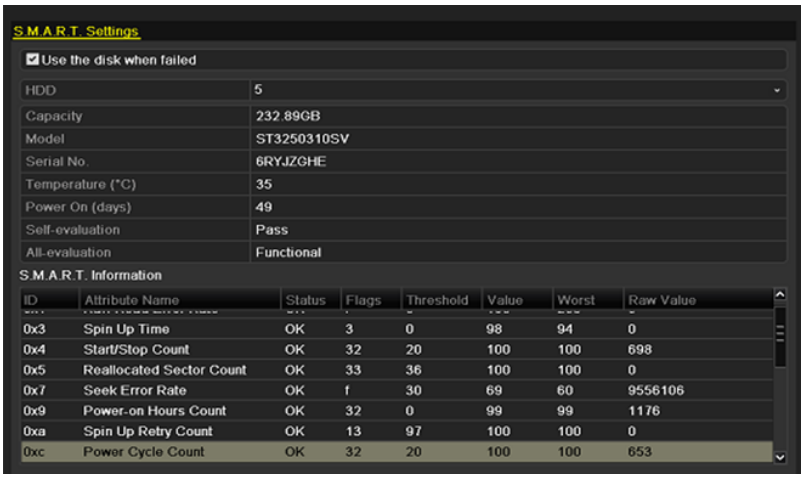

S.M.A.R.T. Settings
Use the disk when failed
HDD 5
Capacity 232.89GB
Model ST3250310SV
Serial No. 6RYJZGHE
Temperature (°C) 35
Power On (days) 49
Self-evaluation Pass
All-evaluation Functional
S.M.A.R.T. Information
ID Attribute Name Status Flags Threshold Value Worst Raw Value
0x3 Spin Up Time OK 3 0 98 94 0
0x4 Start/Stop Count OK 32 20 100 100 698
0x5 Reallocated Sector Count OK 33 36 100 100 0
0x7 Seek Error Rate OK f 30 69 60 9556106
0x9 Power-on Hours Count OK 32 0 99 99 1176
0xa Spin Up Retry Count OK 13 97 100 100 0
0xc Power Cycle Count OK 32 20 100 100 653

Figure 11.22 S.M.A.R.T Settings Interface

Note: If you want to use the HDD even when the S.M.A.R.T. checking is failed, you can check the checkbox before the **Use the disk when failed** item.

11.8 Configuring HDD Error Alarms

Purpose:

You can configure the HDD error alarms when the HDD status is *Uninitialized* or *Abnormal*.

Steps:

1. Enter the Exception interface.

   Menu > Configuration > Exceptions

2. Select the Exception Type to **HDD Error** from the dropdown list.
3. Click the checkbox(s) below to select the HDD error alarm type (s), as shown in Figure 11.23.

Note: The alarm type can be selected to: Audio Warning, Notify Surveillance Center, Send Email and Trigger Alarm Output. Please refer to *Chapter 8.6 Setting Alarm Response Actions*.

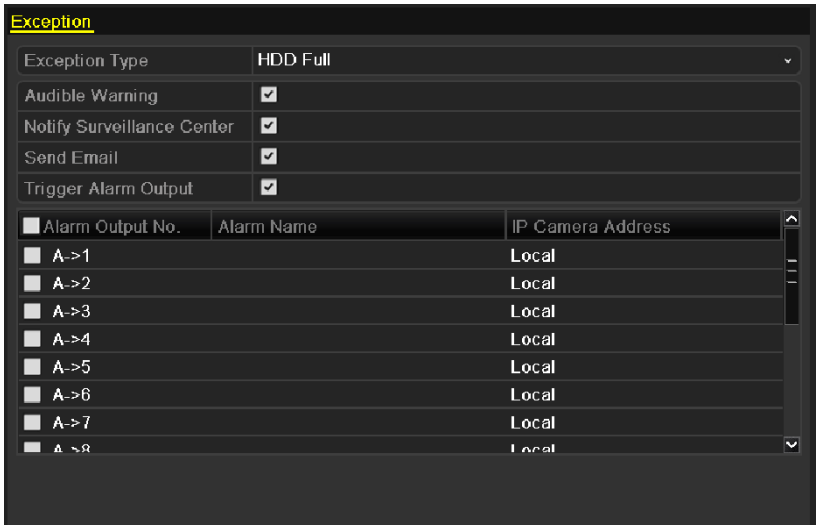


Figure 11.23 Configure HDD Error Alarm

4. When the Trigger Alarm Output is selected, you can also select the alarm output to be triggered from the list below.
5. Click the **Apply** button to save the settings.

C H A P T E R 12

Camera Settings

12.1 Configuring OSD Settings

Purpose:

You can configure the OSD (On-screen Display) settings for the camera, including date /time, camera name, etc.

Steps:

1. Enter the OSD Configuration interface.
   Menu > Camera > OSD
2. Select the camera to configure OSD settings.
3. Edit the Camera Name in the text field.
4. Configure the Display Name, Display Date and Display Week by clicking the checkbox.
5. Select the Date Format, Time Format and Display Mode.

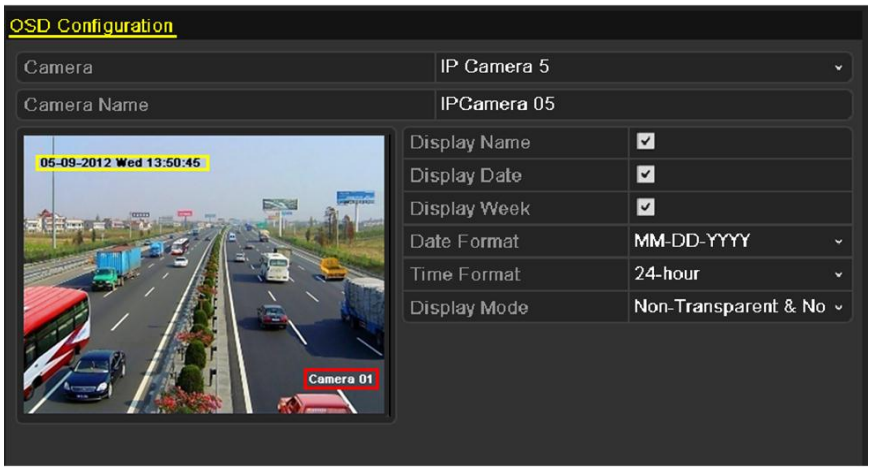


Figure 12.1 OSD Configuration Interface

6. You can use the mouse to click and drag the text frame on the preview window to adjust the OSD position.
7. Click the **Apply** button to apply the settings.

12.2 Configuring Privacy Mask

Purpose:

You are allowed to configure the four-sided privacy mask zones that cannot be viewed by the operator.

Steps:

1. Enter the Privacy Mask Settings interface.
   Menu > Camera >Privacy Mask
2. Select the camera to set privacy mask.
3. Click the checkbox of **Enable Privacy Mask** to enable this feature.

Figure 12.2 Privacy Mask Settings Interface

4. Use the mouse to draw a zone on the window. The zones will be marked with different frame colors.

Note: Up to 4 privacy masks zones can be configured and the size of each area can be adjusted.

5. The configured privacy mask zones on the window can be cleared by clicking the corresponding Clear Zone1-4 icons on the right side of the window, or click **Clear All** to clear all zones.

Figure 12.3 Set Privacy Mask Area

6. Click the **Apply** button to save the settings.

12.3 Configuring Video Parameters

Steps:

1. Enter the Image Settings interface.

   Menu > Camera >Image

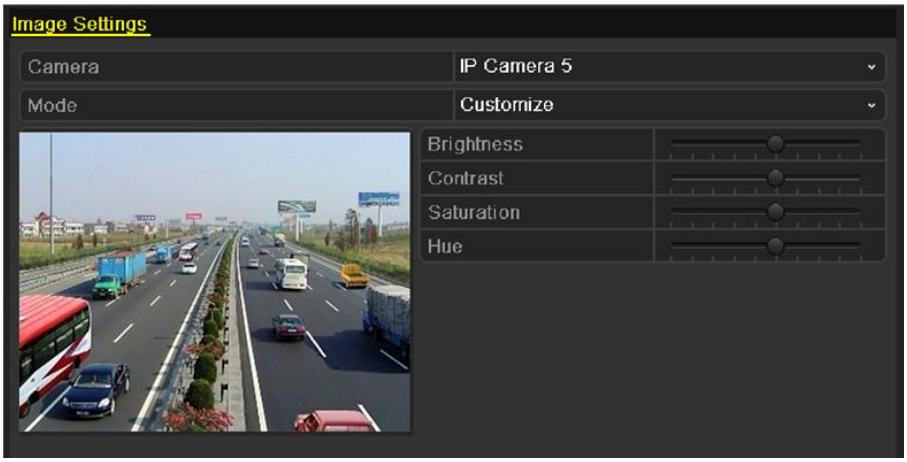


Figure 12.4 Image Settings Interface

2. Select the camera to set image parameters.
3. Select the mode from the dropdown list of **Mode**. Five modes are selectable: Standard, Indoor, Dim Light, Outdoor and Customize.
4. When the mode is selected to Customize, you can adjust the video parameters, including Brightness, Contrast, Saturation and Hue.
5. Click the **Apply** button to save the settings.

C H A P T E R 13

NVR Management and Maintenance

13.1 Viewing System Information

13.1.1 Viewing Device Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Device Info** tab to enter the Device Information menu to view the device name, model, serial No. , firmware version and decoding version, as shown in Figure 13.1.

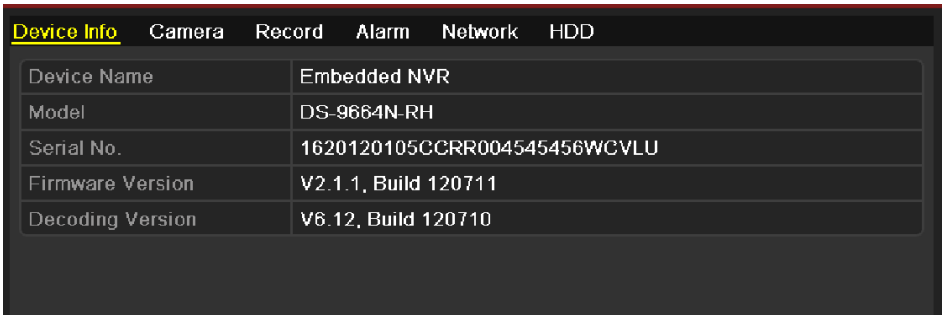


Figure 13.1 Device Information Interface

13.1.2 Viewing Camera Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Camera** tab to enter the Camera Information menu to view the status of each camera, as shown in Figure 13.2.

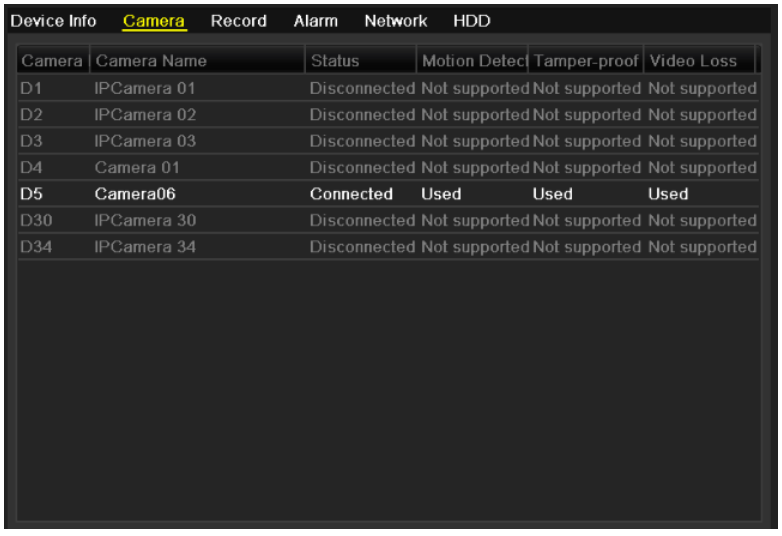

Device Info
Camera
Record
Alarm
Network
HDD
Camera
Camera Name
Status
Motion Detect
Tamper-proof
Video Loss
D1 IPCamera 01 Disconnected Not supported Not supported Not supported
D2 IPCamera 02 Disconnected Not supported Not supported Not supported
D3 IPCamera 03 Disconnected Not supported Not supported Not supported
D4 Camera 01 Disconnected Not supported Not supported Not supported
D5 Camera06 Connected Used Used Used
D30 IPCamera 30 Disconnected Not supported Not supported Not supported
D34 IPCamera 34 Disconnected Not supported Not supported Not supported

Figure 13.2 Camera Information Interface

13.1.3 Viewing Record Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Record** tab to enter the Record Information menu to view the recording status encoding parameters of each camera, as shown in Figure 13.3.

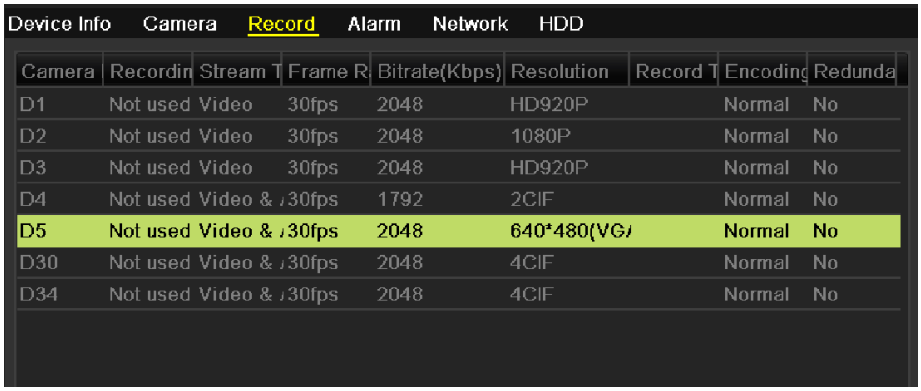

Device Info
Camera
Record
Alarm
Network
HDD
Camera
Recordin
Stream T
Frame R
Bitrate(Kbps)
Resolution
Record T
Encoding
Redunda
D1 Not used Video 30fps 2048 HD920P Normal No
D2 Not used Video 30fps 2048 1080P Normal No
D3 Not used Video 30fps 2048 HD920P Normal No
D4 Not used Video & A 30fps 1792 2CIF Normal No
D5 Not used Video & A 30fps 2048 640*480(VG/ Normal No
D30 Not used Video & A 30fps 2048 4CIF Normal No
D34 Not used Video & A 30fps 2048 4CIF Normal No

Figure 13.3 Record Information Interface

13.1.4 Viewing Alarm Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Alarm** tab to enter the Alarm Information menu to view the alarm information, as shown in Figure 13.4.

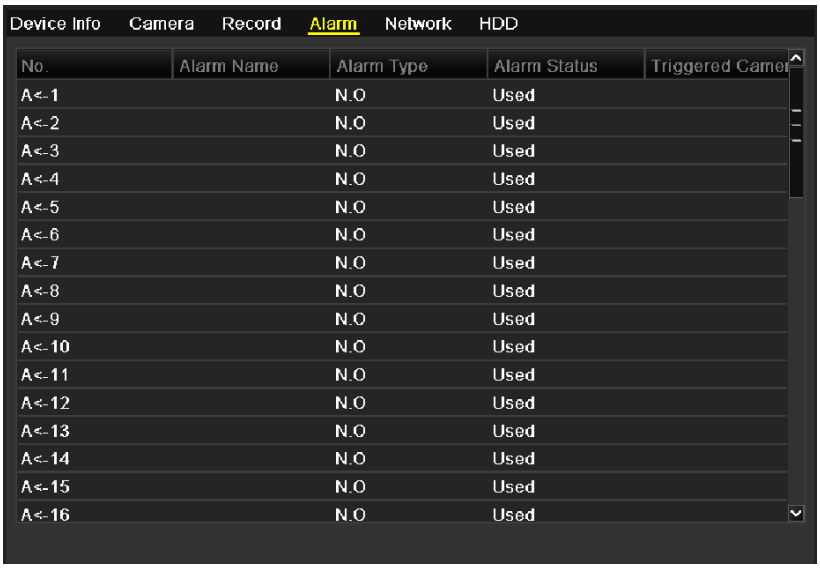


Figure 13.4 Alarm Information Interface

13.1.5 Viewing Network Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **Network** tab to enter the Network Information menu to view the network information, as shown in Figure 13.5.

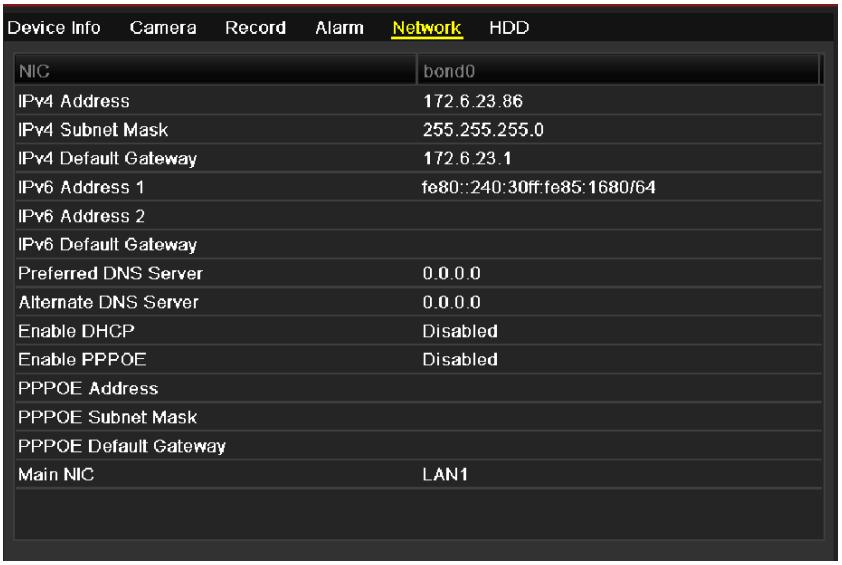


Figure 13.5 Network Information Interface

13.1.6 Viewing HDD Information

Steps:

1. Enter the System Information interface.
   Menu >Maintenance>System Info
2. Click the **HDD** tab to enter the HDD Information menu to view the HDD status, free space, property, etc., as shown in Figure 13.6.

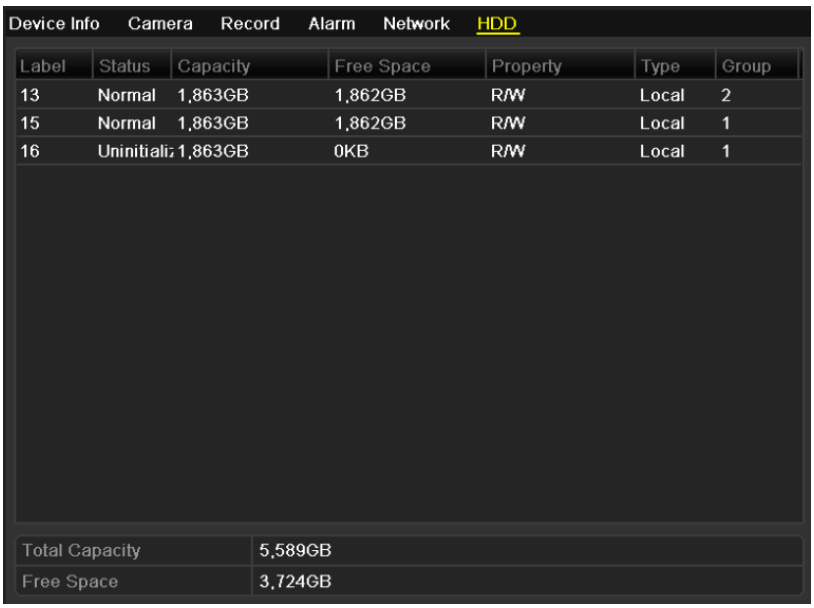


Figure 13.6 HDD Information Interface

13.2 Searching & Export Log Files

Purpose:

The operation, alarm, exception and information of the NVR can be stored in log files, which can be viewed and exported at any time.

Steps:

1. Enter the Log Search interface.

   Menu >Maintenance>Log Search

Figure 13.7 Log Search Interface

2. Set the log search conditions to refine your search, including the Start Time, End Time, Major Type and Minor Type.
3. Click the **Search** button to start search log files.
4. The matched log files will be displayed on the list shown below.

Note: Up to 2000 log files can be displayed each time.

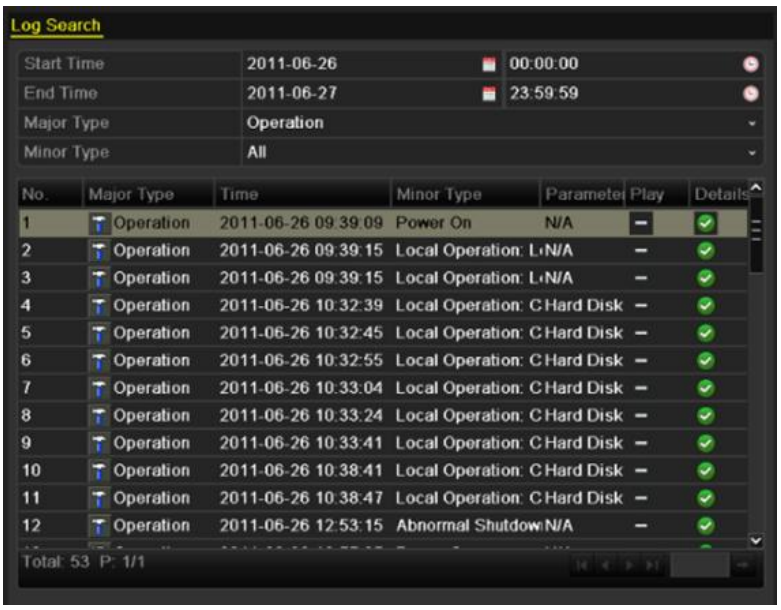

Log Search
Start Time 2011-06-26 00:00:00
End Time 2011-06-27 23:59:59
Major Type Operation
Minor Type All
No. Major Type Time Minor Type Parameter Play Details
1 Operation 2011-06-26 09:39:09 Power On N/A
2 Operation 2011-06-26 09:39:15 Local Operation: L N/A
3 Operation 2011-06-26 09:39:15 Local Operation: L N/A
4 Operation 2011-06-26 10:32:39 Local Operation: C Hard Disk
5 Operation 2011-06-26 10:32:45 Local Operation: C Hard Disk
6 Operation 2011-06-26 10:32:55 Local Operation: C Hard Disk
7 Operation 2011-06-26 10:33:04 Local Operation: C Hard Disk
8 Operation 2011-06-26 10:33:24 Local Operation: C Hard Disk
9 Operation 2011-06-26 10:33:41 Local Operation: C Hard Disk
10 Operation 2011-06-26 10:38:41 Local Operation: C Hard Disk
11 Operation 2011-06-26 10:38:47 Local Operation: C Hard Disk
12 Operation 2011-06-26 12:53:15 Abnormal Shutdow N/A
Total: 53 P: 1/1

Figure 13.8 Log Search Results

5. You can click the button of each log or double click it to view its detailed information, as shown in Figure 9. And you can also click the button to view the related video files if available.

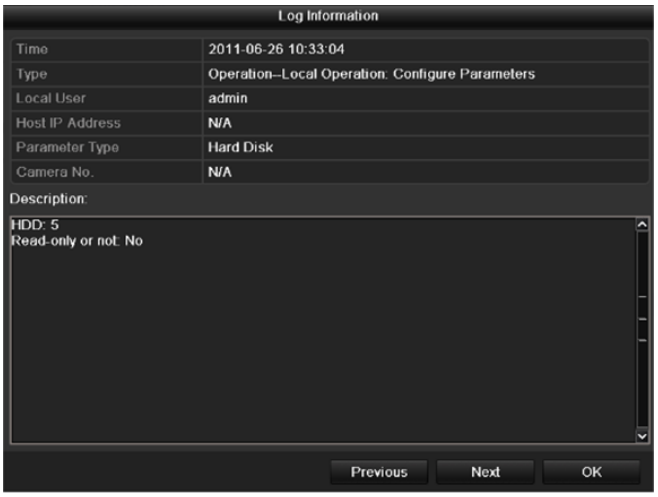


Figure 13.9 Log Details

6. If you want to export the log files, click the **Export** button to enter the Export menu, as shown in Figure 13.10.

Figure 13.10 Export Log Files

7. Select the backup device from the dropdown list of **Device Name**.
8. Click the **Export** to export the log files to the selected backup device.

   You can click the **New Folder** button to create new folder in the backup device, or click the **Format** button to format the backup device before log export.

   Note:

   1) Please connect the backup device to NVR before operating log export.
   2) The log files exported to the backup device are named by exporting time, e.g., *20110514124841logBack.txt*.

13.3 Importing/Exporting Configuration Files

Purpose:

The configuration files of the NVR can be exported to local device for backup; and the configuration files of one NVR can be imported to multiple NVR devices if they are to be configured with the same parameters.

Steps:

1. Enter the Import/Export Configuration File interface.

   Menu > Maintenance >Import/Export

Figure 13.11 Import/Export Config File

2. Click the **Export** button to export configuration files to the selected local backup device.
3. To import a configuration file, select the file from the selected backup device and click the **Import** button. After the import process is completed, you must reboot the NVR.

Note: After having finished the import of configuration files, the device will reboot automatically.

13.4 Upgrading System

Purpose:

The firmware on your NVR can be upgraded by local backup device or remote FTP server.

13.4.1 Upgrading by Local Backup Device

Steps:

1. Connect your NVR with a local backup device where the update firmware file is located.
2. Enter the Upgrade interface.
   Menu >Maintenance>Upgrade
3. Click the **Local Upgrade** tab to enter the local upgrade menu, as shown in Figure 13.12.

Figure 13.12 Local Upgrade Interface

4. Select the update file from the backup device.
5. Click the **Upgrade** button to start upgrading.
6. After the upgrading is complete, reboot the NVR to activate the new firmware.

13.4.2 Upgrading by FTP

Before you start:

Configure PC (running FTP server) and NVR to the same Local Area Network. Run the 3rd-party TFTP software on the PC and copy the firmware into the root directory of TFTP.

Steps:

1. Enter the Upgrade interface.

Menu >Maintenance>Upgrade

2. Click the **FTP** tab to enter the local upgrade interface, as shown in Figure 13.13.

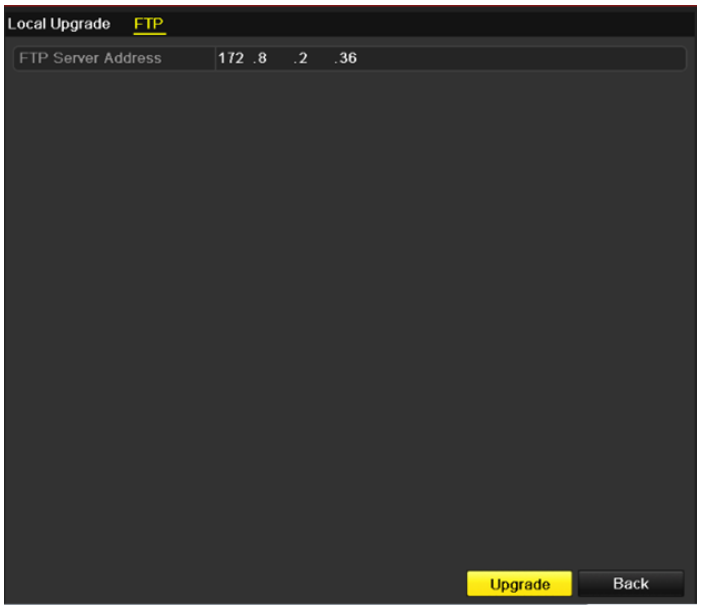


Figure 13.13 FTP Upgrade Interface

3. Enter the FTP Server Address in the text field.
4. Click the **Upgrade** button to start upgrading.
5. After the upgrading is complete, reboot the NVR to activate the new firmware.

13.5 Restoring Default Settings

Steps:

1. Enter the Default interface.

   Menu > Maintenance > Default

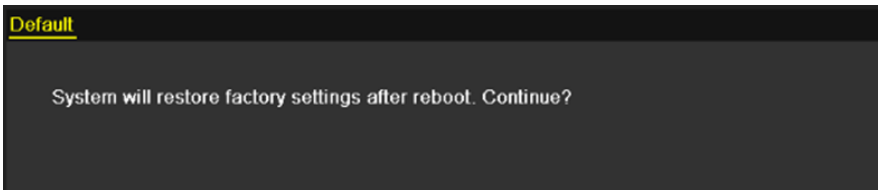


Figure 13.14 Restore Factory Default

2. Click the **OK** button to restore the default settings.

Note: Except the network parameters (including IP address, subnet mask, gateway, MTU, NIC working mode, default route and server port) and the RAID enabling status, all other parameters of the device will be restored to factory default settings.

C H A P T E R 1 4

Others

14.1 Configuring RS-232 Serial Port

Purpose:

The RS-232 port can be used in two ways:

• Parameters Configuration: Connect a PC to the NVR through the PC serial port. Device parameters can be configured by using software such as HyperTerminal. The serial port parameters must be the same as the NVR's when connecting with the PC serial port.

• Transparent Channel: Connect a serial device directly to the NVR. The serial device will be controlled remotely by the PC through the network and the protocol of the serial device.

Steps:

1. Enter the RS-232 Settings interface.

   Menu >Configuration> RS-232

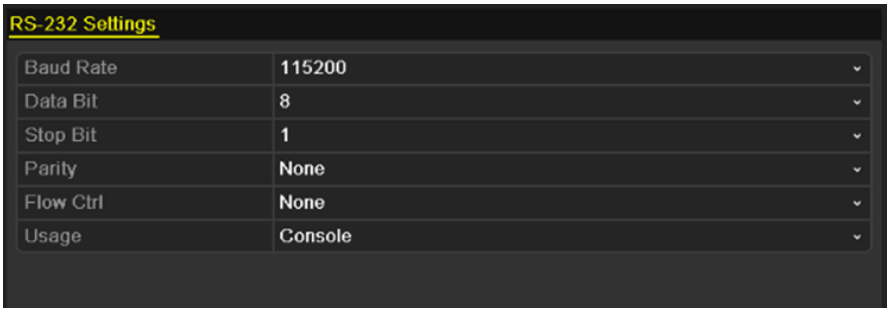


Figure 14.1 RS-232 Settings Interface

2. Configure RS-232 parameters, including baud rate, data bit, stop bit, parity, flow control and usage.
3. Click the **Apply** button to save the settings.

14.2 Configuring General Settings

Purpose:

You can configure the output resolution, date/time, LCD contrast, etc. through the Menu > Configuration > General interface.

Steps:

1. Enter the General Settings interface.
   Menu >Configuration>General
2. Select the **General** tab.

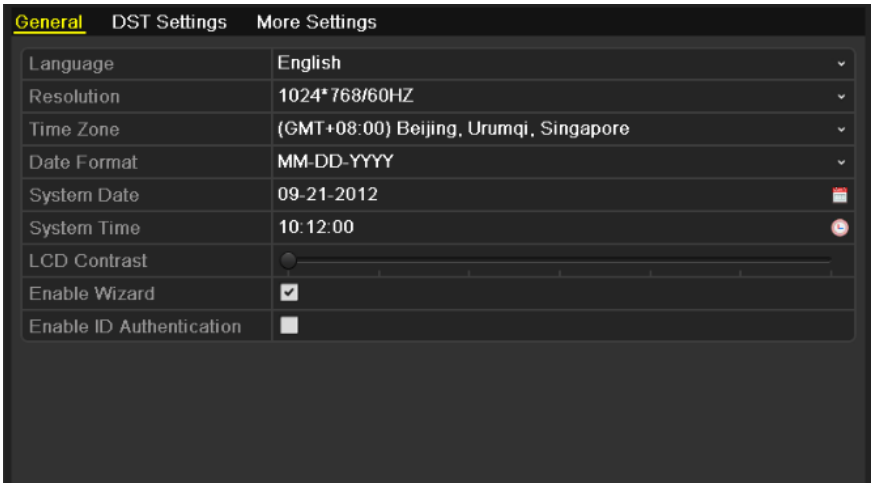


Figure 14.2 General Settings Interface

3. Configure the following settings:
   - **Language:** The default language used is *English*.
   - **Resolution:** Select the video output resolution. The following resolution is selectable depending on the monitor connected: 1920 ×1080P / 60Hz, 1600 ×1200 / 60Hz, 1280 ×1024 / 60Hz, 1280 ×720 / 60Hz and 1024 ×768 / 60Hz.
   - **Time Zone:** Select the time zone.
   - **Date Format:** Select the date format.
   - **System Date:** Select the system date.
   - **System Time:** Select the system time.
   - **LCD Contrast:** Move the sliding bar to adjust the LCD contrast on the front panel.
   - **Enable Wizard:** Enable/disable the Wizard when the device starts up.
   - **Enable ID Authentication:** Enable/disable the use of the login password.
4. Click the **Apply** button to save the settings.

14.3 Configuring DST Settings

Steps:

1. Enter the General Settings interface.
   Menu >Configuration>General
2. Choose **DST Settings** tab.

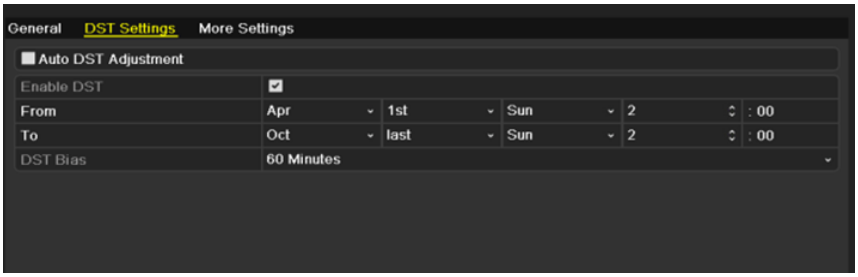


Figure 14.3 DST Settings Interface

You can check the checkbox before the **Auto DST Adjustment** item.

Or you can manually check the **Enable DST** checkbox, and then you choose the date of the DST period.

14.4 Configuring More Settings

Steps:

1. Enter the General Settings interface.
   Menu >Configuration>General
2. Click the **More Settings** tab to enter the More Settings interface, as shown in Figure 14.4.

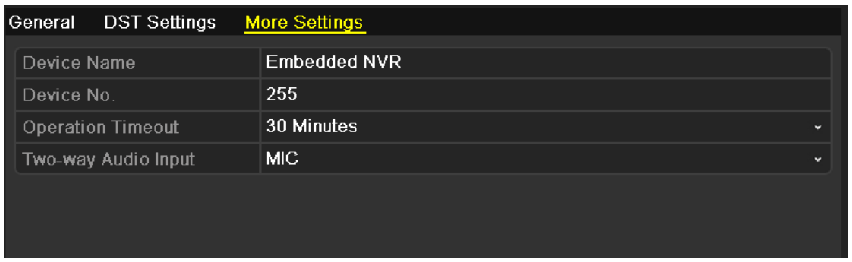


Figure 14.4 More Settings Interface

3. Configure the following settings:
   - **Device Name:** Edit the name of NVR.
   - **Device No.:** Edit the serial number of NVR. The Device No. can be set in the range of 1~255, and the default No. is 255.
   - **Operation Timeout:** Set timeout time for menu inactivity.
     Example: when the timeout time is set to *5 Minutes*, then the system will exit from the current operation menu to live view screen after 5 minutes of menu inactivity.
   - **Two-way Audio Input:** Select the two-way audio input interface to MIC In or Line In.
4. Click the **Apply** button to save the settings.

14.5 Managing User Accounts

Purpose:

There is a default account in the NVR: *Administrator*. The *Administrator* user name is *admin* and the password is *12345*. The *Administrator* has the permission to add and delete user and configure user parameters.

14.5.1 Adding a User

Steps:

1. Enter the User Management interface.
   Menu >Configuration>User

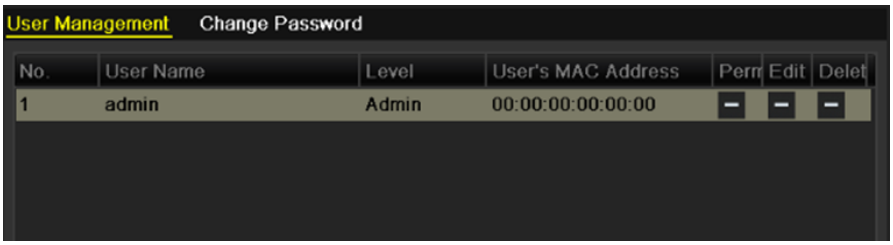


Figure 14.5 User Management Interface

2. Click the **Add** button to enter the Add User interface.

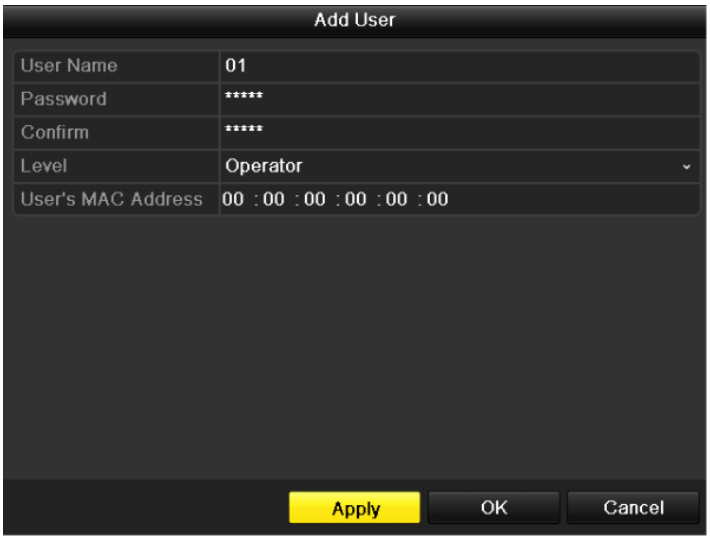


Figure 14.6 Add User Menu

3. Enter the information for new user, including **User Name**, **Password**, **Level** and **User's MAC Address**.

   Level: Set the user level to Operator or Guest. Different user levels have different operating permission.

   - **Operator:** The *Operator* user level has permission of Two-way Audio in Remote Configuration and all operating permission in Camera Configuration.

- **Guest:** The Guest user has no permission of Two-way Audio in Remote Configuration and only has the local/remote playback in the Camera Configuration.
- **User's MAC Address:** The MAC address of the remote PC which logs onto the NVR. If it is configured and enabled, it only allows the remote user with this MAC address to access the NVR.

4. Click the **OK** button to save the settings and go back to the User Management interface. The added new user will be displayed on the list, as shown in Figure 14.7.

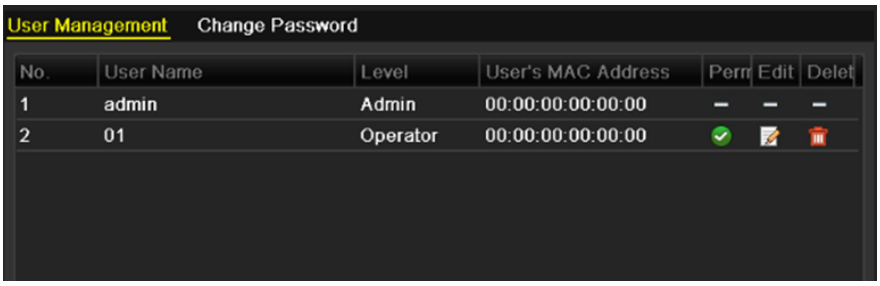


Figure 14.7 Added User Listed in User Management Interface

5. Select the user from the list and then click the button to enter the Permission settings interface, as shown in Figure 14.8.

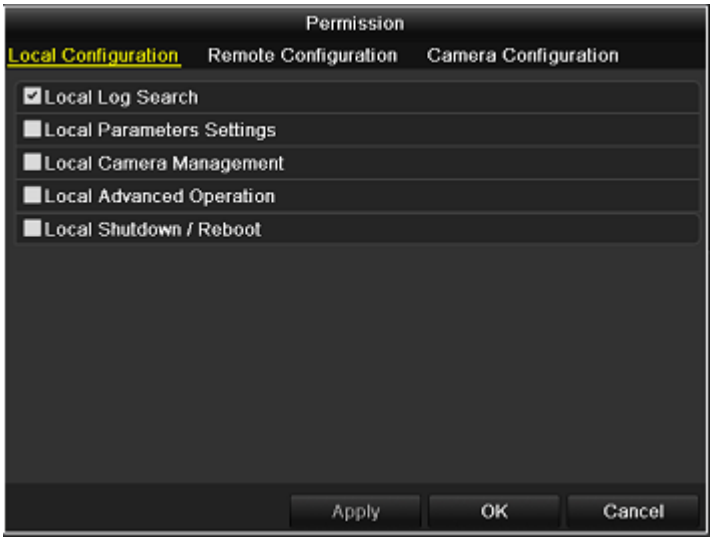


Figure 14.8 User Permission Settings Interface

6. Set the operating permission of Local Configuration, Remote Configuration and Camera Configuration for the user.

Local Configuration

- Local Log Search: Searching and viewing logs and system information of NVR.
- Local Parameters Settings: Configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Local Camera Management: The adding, deleting and editing of IP cameras.
- Local Advanced Operation: Operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Local Shutdown Reboot: Shutting down or rebooting the NVR.

Remote Configuration

- Remote Log Search: Remotely viewing logs that are saved on the NVR.

- Remote Parameters Settings: Remotely configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Remote Camera Management: Remote adding, deleting and editing of the IP cameras.
- Remote Serial Port Control: Configuring settings for RS-232 and RS-485 ports.
- Remote Video Output Control: Sending remote button control signal.
- Two-Way Audio: Realizing two-way radio between the remote client and the NVR.
- Remote Alarm Control: Remotely arming (notify alarm and exception message to the remote client) and controlling the alarm output.
- Remote Advanced Operation: Remotely operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Remote Shutdown/Reboot: Remotely shutting down or rebooting the NVR.

Camera Configuration

- Remote Live View: Remotely viewing live video of the selected camera (s).
- Local Manual Operation: Locally starting/stopping manual recording, picture capturing and alarm output of the selected camera (s).
- Remote Manual Operation: Remotely starting/stopping manual recording, picture capturing and alarm output of the selected camera (s).
- Local Playback: Locally playing back recorded files of the selected camera (s).
- Remote Playback: Remotely playing back recorded files of the selected camera (s).
- Local PTZ Control: Locally controlling PTZ movement of the selected camera (s).
- Remote PTZ Control: Remotely controlling PTZ movement of the selected camera (s).
- Local Video Export: Locally exporting recorded files of the selected camera (s).

7. Click the **OK** button to save the settings and exit interface.

Note: Only the *admin* user account has the permission of restoring factory default parameters.

14.5.2 Deleting a User

Steps:

1. Enter the User Management interface.
   Menu >Configuration>User
2. Select the user to be deleted from the list, as shown in Figure 14.9.

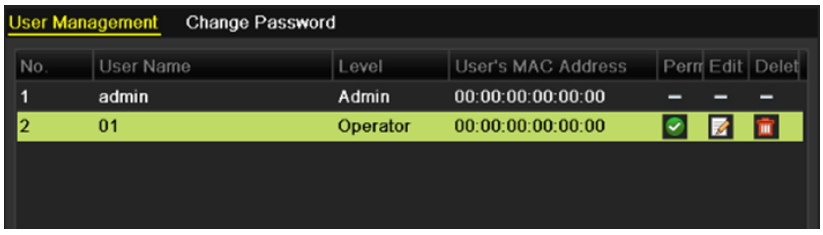


Figure 14.9 Delete a User

3. Click the icon to delete the selected user.

14.5.3 Editing a User

Steps:

1. Enter the User Management interface.

Menu >Configuration>User

2. Select the user to be edited from the list, as shown in Figure 14.10.

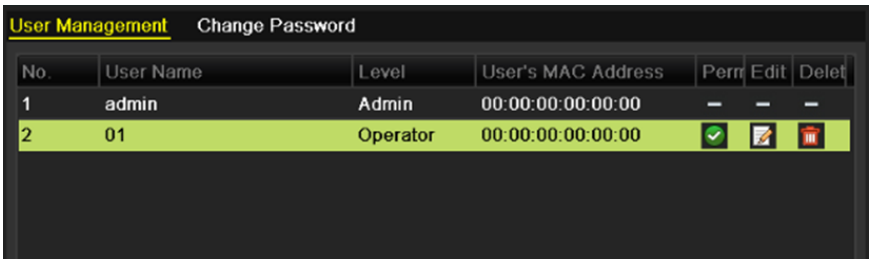


Figure 14.10 Edit a User

3. Click the icon to enter the Edit User interface, as shown in Figure 14.11.

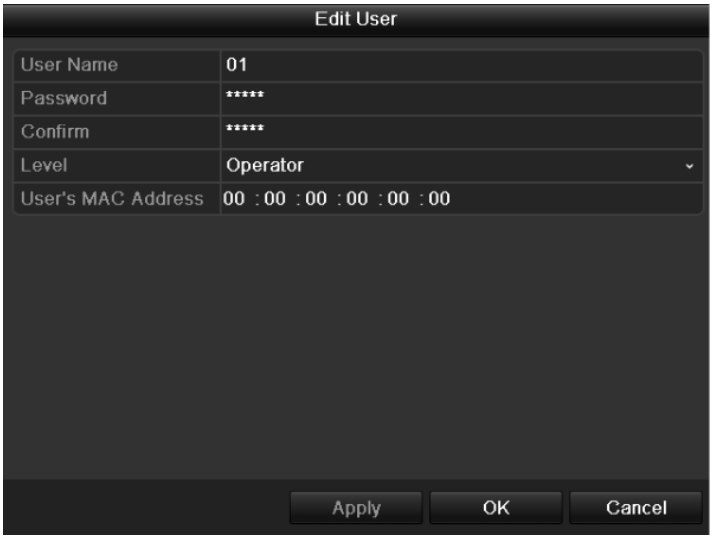


Figure 14.11 Edit User Interface

4. Edit the user information, including user name, password, level and MAC address.
5. Click the **OK** button to save the settings and exit the menu.

14.5.4 Changing Password of Admin

Purpose:

The password of the Admin user account can be changed in the User Management menu.

Steps:

1. Enter the User Management interface.

   Menu >Configuration>User.

2. Click the **Change Password** tab to enter the Change Password menu, as shown in Figure 14.12.

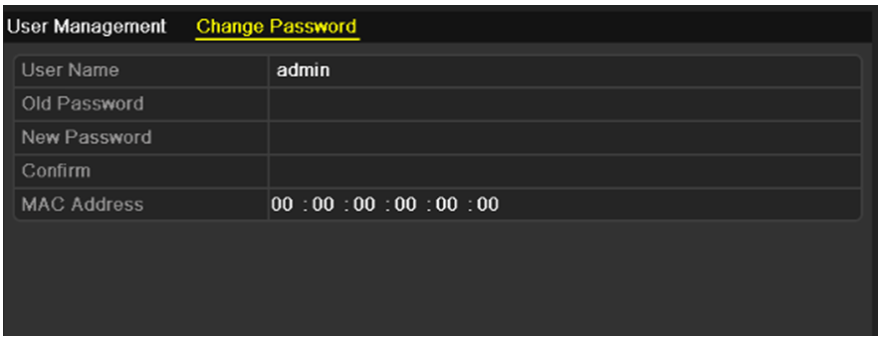


Figure 14.12 Change Password

3. Enter the old password, new password and confirm password on the menu.
4. Click the **Save** button to save the changes.

C H A P T E R 1 5

Appendix

List of Hikvision Network Cameras/Encoders Supported by DS-9664NI-RH

HD Network Camera

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-2CD883F-E	V4.1.0 build130111	H.264 MPEG4	2560×1920	√	√	——	√	√	√
DS-2CD783F-E(I)	V4.1.0 build130111	H.264 MPEG4	2560×1920	√	√	——	√	√	√
DS-2CD886MF-E	V4.0.3 build 120913	H.264	2560×1920	√	√	——	√	√	√
DS-2CD886BF-E	V4.0.3 build 120913	H.264	2560×1920	√	√	——	√	√	√
DS-2CD854F-E	V4.1.0 build130111	H.264 MPEG4	2048×1536	√	√	——	√	√	√
DS-2CD754F-E(I)	V4.1.0 build130111	H.264 MPEG4	2048×1536	√	√	——	√	√	√
DS-2CD8254F-E(I)	V4.1.0 build130111	H.264 MPEG4	2048×1536	√	√	——	√	√	√
DS-2CD754FWD-E (I)	V4.1.0 build130111	H.264 MPEG4	1920×1080	√	√	——	√	√	√
DS-2CD7254F-EZH	V4.1.0 build130111	H.264 MPEG4	2048×1536	√	√	——	√	×	√
DS-2CD2032-I	V4.0.9 build130106	H.264	2048×1536	√	×	——	√	×	√
DS-2CD2132-I	V4.0.9 build130106	H.264	2048×1536	√	×	——	√	√	√
DS-2CD2232-I	V4.0.9 build130106	H.264	2048×1536	√	×	——	√	√	√
DS-2CD2332-I	V4.0.9 build130106	H.264	2048×1536	√	×	——	√	√	√
DS-2CD753F-E(I)	V4.1.0 build130111	H.264 MPEG4	1600×1200	√	√	——	√	√	√
DS-2CD853F-E	V4.1.0 build130111	H.264 MPEG4	1600×1200	√	√	——	√	√	√
DS-2CD8153F-E	V4.1.0 build130111	H.264 MPEG4	1600×1200	√	√	——	√	×	√
DS-2CD8253F-E(I)	V4.1.0 build130111	H.264 MPEG4	1600×1200	√	√	——	√	×	√
DS-2CD7253F-EZH	V4.1.0	H.264	1600×1200	√	√	——	√	×	√

	build130111	MPEG4							
DS-2CD7153-E	V4.1.0 build130111	H.264 MPEG4	1600×1200	√	×	——	√	×	√
DS-2CD876BF-E	V4.0.3 build 120913	H.264	1600×1200	√	√	——	√	√	√
DS-2CD876MF-E	V4.0.3 build 120913	H.264	1600×1200	√	√	——	√	√	√
DS-2CD877BF(C)	V4.0.3 build 120913	H.264	1920×1080	√	√	——	√	√	√
DS-2CD752MF-E	V2.0 build 110614	MPEG4	1600×1200	√	√	——	√	√	√
	V2.0 build 110426	H.264							
DS-2CD852MF-E	V2.0 build 110614	MPEG4	1600×1200	√	√	——	√	√	√
	V2.0 build 110426	H.264							
DS-2CD852F-E	V2.0 build 110614	MPEG4	1600×1200	√	√	——	√	√	√
	V2.0 build 110426	H.264							
DS-2CD862MF-E	V2.0 build 110614	MPEG4	1280×960	√	√	——	√	√	√
	V2.0 build 110426	H.264							
DS-2CD863PF-E	V4.1.0 build130111	H.264 MPEG4	1280×960	√	√	——	√	√	√
DS-2CD864FWD-E	V4.1.0 build130111	H.264 MPEG4	1280×960	√	√	——	√	√	√
DS-2CD764FWD-E (I)	V4.1.0 build130111	H.264 MPEG4	1280×960	√	√	——	√	√	√
DS-2CD763PF-E(I)	V4.1.0 build130111	H.264 MPEG4	1280×960	√	√	——	√	√	√
DS-2CD7263PF-EZH	V4.1.0 build130111	H.264 MPEG4	1280×960	√	√	——	√	×	√
DS-2CD7164-E	V4.1.0 build130111	H.264 MPEG4	1280×960	√	×	——	√	×	√
DS-2CD8464F-EI	V4.1.0 build130111	H.264 MPEG4	1280×960	√	√	——	√	×	√
DS-2CD2012-I	V4.0.9 build130106	H.264	1280×960	√	×	——	√	√	√
DS-2CD2112-I	V4.0.9 build130106	H.264	1280×960	√	×	——	√	√	√

DS-2CD2212-I	V4.0.9 build130106	H.264	1280×960	√	×	——	√	√	√
DS-2CD2312-I	V4.0.9 build130106	H.264	1280×960	√	×	——	√	√	√

SD Network Camera

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-2CD7133-E	V4.1.0 build130111	H.264 MPEG4	640×480	√	×	——	√	×	√
DS-2CD733F-E(I)	V4.1.0 build130111	H.264 MPEG4	640×480	√	√	——	√	√	√
DS-2CD833F-E	V4.1.0 build130111	H.264 MPEG4	640×480	√	√	——	√	√	√
DS-2CD8133F-E	V4.1.0 build130111	H.264 MPEG4	640×480	√	√	——	√	×	√
DS-2CD893PF(WD)-E	V4.1.0 build130111	H.264 MPEG4	704×576	√	√	——	√	√	√
DS-2CD793PF(WD)-E(I)	V4.1.0 build130111	H.264 MPEG4	704×576	√	√	——	√	√	√
DS-2CD812PF	V2.0 build 090522	H.264	704×576	√	√	——	√	√	√
	V2.0 build 090715	MPEG4							
DS-2CD892PF	V2.0 build 090522	H.264	704×576	√	√	——	√	√	√
	V2.0 build 090715	MPEG4							

Thermal Camera

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-2CD8313PF-E40	V3.2 build120528	H.264	384×288	√	√	——	√	√	√

Intelligent Traffic Camera

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-2CD986A(B)/（C）	V3.1.0 build120423	H.264	2448×2048	×	×	×	×	×	×
DS-2CD986C(B)	V2.3.6 build 120401	H.264	2560×1920	×	×	×	×	×	×
DS-2CD976(B)/(C)	V3.1.0 build120423	H.264	1600×1200	×	×	×	×	×	×

DS-2CD976-V(B)	V3.1.0 build120423	H.264	1600×1200	×	×	×	×	×	×
DS-2CD977(B)/（C）	V3.1.0 build120423	H.264	1920×1080	×	×	×	×	×	×
DS-2CD966(B)	V3.1.0 build120423	H.264	1360×1024	×	×	×	×	×	×
DS-2CD966-V(B)	V3.1.0 build120423	H.264	1360×1024	×	×	×	×	×	×

HD Network Speed Dome

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-2DF1-583	V1.1.0 build 120702	H.264	1920×1080	√	√	√	√	√	√
DS-2DF1-783	V1.1.0 build 120702	H.264	1920×1080	√	√	√	√	√	√
DS-2DF1-572	V1.1.0 build 120702	H.264	1280×720	√	√	√	√	√	√
DS-2DF1-57A	V1.1.0 build 120702	H.264	1280×960	√	√	√	√	√	√
DS-2DF1-772	V1.1.0 build 120702	H.264	1280×720	√	√	√	√	√	√

SD Network Speed Dome

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-2DF1-518	V3.1.2 build 121124	H.264	704×576	√	√	√	√	√	√
DS-2DF1-618H	V3.1.2 build 121124	H.264	704×576	√	√	√	√	√	√
DS-2DF1-718	V3.1.2 build 121124	H.264	704×576	√	√	√	√	√	√

HD Encoder

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-6601HFHI（/L）	V1.0.3 build 121024	H.264	1920×1080	√	√	——	——	——	——

SD Encoder

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
DS-6501HFI(-SATA) DS-6502HFI(-SATA) DS-6504HFI(-SATA)	V1.0.1 build 110104	H.264	704×576	√	√	——	——	——	——

DS-6508HFI(-SATA) DS-6516HFI(-SATA)									
DS-6501HCI(-SATA) DS-6502HCI(-SATA) DS-6504HCI(-SATA) DS-6508HCI(-SATA) DS-6516HCI(-SATA)	V1.0.1 build 110104	H.264	352×288	√	√	——	——	——	——
DS-6601HFI(-SATA) DS-6602HFI(-SATA) DS-6604HFI(-SATA)	V1.2.0 build 120215	H.264	704×576	√	√	——	——	——	——
DS-6601HCI DS-6602HCI DS-6604HCI	V1.2.0 build 120215	H.264	352×288	√	√	——	——	——	——

Note: The information in list above is for reference only and is subject to change without prior notice.

List of Third-party Network Cameras Supported by DS-9664NI-RH

Note: **ONVIF compatibility** refers to the camera can be supported both when it uses the ONVIF protocol and its private protocols. **Only ONVIF is supported** refers to the camera can only be supported when it uses the ONVIF protocol.

Axis

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
M1114	5.09.1	H.264	1280×800	√	×	×	√ (Axis)	×	×
M3014 (ONVIF Compatible)	5.21.1	H.264	1280×800	√	×	×	√ (Axis)	×	×
P3301 (ONVIF Compatible)	5.11.2	H.264	768×576	√	√	×	√ (Axis)	×	×
P3304 (ONVIF Compatible)	5.20	H.264	1440×900	√	√	×	√ (Axis)	×	×
P3343 (ONVIF Compatible)	5.20.1	H.264	800×600	×	√	×	√ (Axis)	×	×
P3344 (ONVIF Compatible)	5.20.1	H.264	1280×800	√	√	×	√ (Axis)	×	×
P5532	5.15	H.264	720×576	√	×	√	√ (Axis)	×	×
P1346E	5.06.1	H.264	2048×1536	√	√	×	√ (Axis)	×	×

Panasonic

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
WV-SF336H	Application: 1.06 Imagedata: 1.06	H.264 MPEG4	1280×960	×	√	×	√	√	×
WV-SP306H	Application: 1.34 Imagedata:1.06	H.264 MPEG4	1280×960	×	√	×	√	√	×

SAMSUNG (ONVIF Compatible)

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
SNB-3000P	V1.41_110709	H.264 MPEG4	704×576	×	√	×	√ (SAMSUNG)	√ (SAMSUNG)	×
SNB-5000P	V2.00_110727	H.264	1280×1024	√ (ONVIF)	√	×	√ (SAMSUNG)	√ (SAMSUNG)	×
SNB-7000P	V1.10_110819	H.264	2048×1536	×	√	×	√	√	×

							(SAMSUNG)	(SAMSUNG)	
SNP-5200H	V1.04_110825	H.264	1280×1024	√ (ONVIF)	√	×	√ (SAMSUNG)	√ (SAMSUNG)	×
SNZ-5200	V1.04_110825	H.264	1280×1024	√ (ONVIF)	√	×	√ (SAMSUNG)	√ (SAMSUNG)	×

SANYO

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
VCC-HD2300P	2.03-02 (110318-00)	H.264	1920×1080	×	×	×	×	×	×
VCC-HD2500P	2.02-02 (110208-00)	H.264	1920×1080	×	√	×	×	×	×
VCC-HD4600P	2.03-02 (110315-00)	H.264	1920×1080	×	√	×	×	×	×
VCC-HD5400	2.03-06 (110315-00)	H.264	1920×1080	×	×	√	×	×	×

SONY (ONVIF Compatible)

Model	Version	Video Compression	Max. Resolution	Sub Stream	Audio	PTZ Control	Motion Detection	Sensor Alarm	Tamper-proof
SNC-DH220T	1.50.00	H.264 MPEG4	1920×1080	×	×	×	×	×	×

Glossary

- **Dual Stream:** Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the DVR, with the main stream having a maximum resolution of 4CIF and the sub-stream having a maximum resolution of CIF.
- **HDD:** Acronym for Hard Disk Drive. A storage medium which stores digitally encoded data on platters with magnetic surfaces.
- **DHCP:** Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
- **HTTP:** Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network
- **PPPoE:** PPPoE, Point-to-Point Protocol over Ethernet, is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet networks.
- **DDNS:** Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.
- **Hybrid DVR:** A hybrid DVR is a combination of a DVR and NVR.
- **NTP:** Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network.
- **NTSC:** Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of anNTSC signal contains 525 scan lines at 60Hz.
- **NVR:** Acronym for Network Video Recorder. An NVR can be a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs.
- **PAL:** Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast televisions systems in large parts of the world. PAL signal contains 625 scan lines at 50Hz.
- **PTZ:** Acronym for Pan, Tilt, Zoom. PTZ cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out.
- **USB:** Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer.

FAQ

- **Why does my NVR make a beeping sound after booting?**

The possible reasons for the warning beep on the NVR are as follows:

a) There is no HDD installed in the NVR.

b) The HDD is not initialized.

c) HDD error

To cancel the beeping sound and use the NVR without HDD, enter the Exception Settings interface. For detailed information, see Chapter Handling Exception..

- **Why does the NVR seem unresponsive when operating with the IR remote control?**

Please read through the section ***Using the IR Remote Control***, and check:

a) The batteries are installed correctly in the remote, making sure that the polarities of the batteries are not reversed.

b) The batteries are fresh and are not out of power.

c) The remote has not been tampered with.

d) There are no fluorescent lamps in use nearby.

- **Why does the PTZ seem unresponsive?**

If the PTZ seem unresponsive, please check:

a) The RS-485 cable is properly connected.

b) The dome decoder type is correct.

c) The dome decoder speed configuration is correct.

d) The dome decoder address bit configuration is correct.

e) That the main board RS-485 interface is not broken.

- **Why is there no video recorded after setting the motion detection?**

If there are no recorded video after setting the motion detection, please check:

a) The recording schedule is setup correctly by following the steps listed in ***Configuring Motion Detection Record and Capture***.

b) The motion detection area is configured correctly (See ***Setup Motion Detection Alarm***).

c) The channels are being triggered for motion detection (See ***Setup Motion Detection Alarm***).

- **Why doesn't the NVR detect my USB export device for exporting recorded files?**

There's a chance that the NVR and your USB device is not compatible. Please refer to our company's website to view a list of compatible devices.